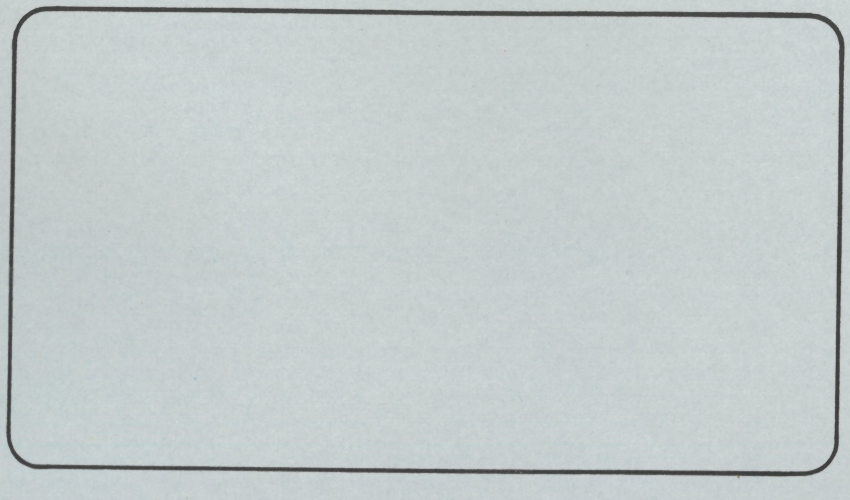


Commodore

Commodore
International Services Corporation

1200 Wilson Drive
West Chester, PA 19380
(215) 431-9100

April 8, 1991

Dear Developer,

Break out the champagne! We have sold the first CDTV units to users during the World of Amiga show in New York, where the CDTV player was on sale direct to the public for the first time. It was a real thrill!

As you can imagine, things have been very busy around here. We've been trying to bring titles over the final hurdles and into our wharehouse as finished goods. We were present at the European launch of the CDTV at the CeBIT show in Hannover, West Germany. The system was very well received.

We also presented the CDTV player at the Microsoft CD-ROM and MultiMedia conference in San Jose, California. People are sitting up and taking notice, and new developers are coming on board all the time.

This is the 7th release of the CDTV multimedia developers notes. Here follows an overview of the important issues.

- **Pre-mastering and Mastering for CDTV multimedia.** The enclosed document describes the mastering process of a CDTV disc in detail. detail. It also includes the names and addresses of companies in the U.S. and Europe who can handle the pre-mastering, mastering, and replication of CDTV titles.

  In order to pre-master your own disc, you must have signed a "Commodore CDTV Product Licence". Once you have returned a signed copy of this document to us in Special Projects, we send you a copy of the ISO Tools diskette. This diskette contains all the tools necessary to create an ISO image of your product, which can then be transferred to a write-once CD.

  File this document in the "Publishing" section of your Developer Notes binder.

- **The "Commodore CDTV Product Licence".** In the last mailout, we sent you a copy of this agreement. Following your feedback, and

responses from replicators, we have modified the terms of the licence. We attach a copy of the initial version of this agreement and a list of the modifications between the original version and the final one.

Two copies of this document are attached for your convenience. It lays out the terms and conditions for replicating titles for the CDTV player. It must be signed by all developers wishing to replicate bootable discs for the CDTV player.

- **CDTV Product catalogs.** A number of catalogs are forthcoming for CDTV products. We include a list of names and contacts for you to spread the word on your titles. You should pass this along to your Marketing people.

  File this document in the "Publishing" section of your Developer Notes binder.

- **MultiMedia Production course.** Please find attached a document describing a course on multimedia design and production techniques. This course, directed by a company who has already produced titles for CDTV multimedia, can be of great help to people wanting to quickly assimilate the techniques necessary for preparing titles on the Amiga for the CDTV player.

  File this document in the "General" section of your Developer Notes binder.

- **Registration in the CATS Amiga Developer Support Program.** You should have received a letter describing this program.

  Up until now, we have provided Developer support for free for CDTV. Now that the number of CDTV developers has grown into the hundreds, and the amount of support required has increased steadily, we are making the CDTV player a mainstream activity.

  It is important that all CDTV developers register in this program. This will be the only way for you to receive technical and marketing support, future versions of these CDTV Developer Notes, etc. Please take a few minutes to fill out the forms, make out a check, and return them to CATS. If you did not receive the forms, let us know.

- **Release 1.0 of the Flash ROMs.** This version of the Flash ROMs is the definitive one, that has been shipped with all CDTV players sent to end users. We sent a copy to all developers in our database who have CDTV players. If you have a CDTV player and have not received a copy of this diskette, please contact your local support manager or CDTV support person.

- **Translation of CDTV titles.** To facilitate the translation and adaptation of CDTV titles to other languages and cultures, we have established translation centers. These are companies with experience in translation and narration of text in various languages. You can send an ASCII script containing the text to be translated. The translation center can provide the following services:

  - translation of the text into multiple target languages
  - contract voice talent, professional actors with appropriate native language expertise
  - record your transcripts onto tape, either cassette or DAT

  Here are the addresses of two translation centers. We have already worked with Dateline Friday in Paris for the translation of the Welcome Disk into French, German, Italian, and British. Please contact them directly for pricing information.

  DATELINE FRIDAY
  1 rue du Dome
  F-75116 Paris
  FRANCE
  tel. (33) 1 45 53 55 33
  fax (33) 1 47 55 87 74
  contact: Adam Tipton Berns

  EUROPEAN NEWS NETWORK LTD
  24 South Frederick Street
  Dublin 2
  Republic of Ireland
  Brussels office tel.(32) 2 736 3690
  fax (32) 2 736 3662
  contact: Peter Jones

  If you can recommend other translation companies, we would be glad to hear about them.

- **Oxxi Inc.** has a special program for Amiga developers. Please find attached flyers describing a special promotional offer for ScanMaster and SoundMaster. Contact Oxxi for details. We have not tested nor validated the products described.

- **Purchase of CDTV titles.** You will be able to purchase CDTV titles at a developer discount directly from CATS. Please contact CATS for details on how to order.

- **CDTV Tools Disk.** Please find attached a document describing the contents of the CDTV Tools Disk, Jan. 29 1991 release. This diskette, containing important pieces of code, is available upon request from your local CDTV support person.

  File this document in the "Developer Tools" section of your Developer Notes binder.

- **Note on the use of the remote control in joystick mode.** The final revision of the firmware which handles the infrared remote controller has an important limitation.

When in Joystick mode on the remote control, only the four directional arrows and the 'A' button (fire button) send signals to the CDTV player. All other buttons are ignored (except the Genlock, CD/TV, Joy/Mouse, Power and the two Volume buttons).

If your application uses Joystick mode, do not try to read any other buttons.

Furthermore, it is impossible to follow the User Interface Guidelines concerning the usage of the 'B' button as a "backwards", or escape button, when in Joystick mode. (Then again, you cannot use the Help button or the OK button when in Joystick mode.)

This will change in future revisions of the remote controller. We plan to release a new version of the remote controller. It will feature a switch (not a toggle) to choose between joy and mouse modes, allowing the user to see which mode he is in by looking at his remote control. Furthermore, it will allow all buttons on the remote to send signals in both mouse and joystick mode.

o **FEEDBACK ON THE USER INTERFACE GUIDELINES.** In late February we distributed a preliminary version of the User Interface Guidelines, and we asked for your feedback and comments on these guidelines. The response to date has been underwhelming. We will extend the deadline for comments to the end of April.

If you have comments, suggestions, or criticisms to make, you may:

1) send us a fax to our number (1) 215-429-0643

2) post your comments on Usenet, under the adsp.cdtv.sw conference

3) post your comments on Bix, under the amiga.com/cdtv topic.

For those of you who did make comments, thank you for your feedback on these notes.

o **Friendly Warning.** Now that we are shipping CDTV units, we feel it is appropriate to draw your attention to the issue of future hardware compatibility.

We must reserve the right to make modifications on certain parts of the hardware, most notably concerning the CD-ROM interface. In an effort **to maintain compatibility with future versions of the CDTV player, we strongly suggest that you therefore do not write directly to the hardware** to control the CD drive. You should make calls to the CDTV.device to be assured of future compatibility.

If you write directly to the hardware, you will more than likely encounter future problems. We are counting on your cooperation on this.

It's hard to believe that at last CDTV multimedia is really happening... first in 5 U.S. cities and soon worldwide! But it's just a beginning from the standpoint of titles. Now is the time to be working on the discs you will ship for next Christmas. Let us know how we can help you. Your discs are the key to CDTV players' success. We can't do it without you.

Best wishes,

Gail P. Wellington
Director, Special Projects

Commodore
International Services Corporation

1200 Wilson Drive
West Chester, PA 19380
(215) 431-9100

April 8th, 1991

Dear Developer,

Please find enclosed a copy of the Welcome Disc. This disc is being delivered with all production versions of the CDTV player.

Now that CDTV players are shipping, we want to bring all the pre-production units in the field up to the latest revision. Please complete the following form, and return it to us by fax or by mail at your earliest convenience. Please fill out one form for each CDTV player in your possession.

It is important for you to have an up-to-date system. As you know, systems with motherboard revision 2.1 and below had a sound balance problem: on a mixed-mode disc, the level of Amiga sound was much stronger than the CD-DA level sound. This problem has been fixed in machines rev. 2.2 and above.

We will arrange to have your system upgraded as soon as possible. We will not leave you without a CDTV player during this upgrade process. We will either ship you a replacement unit, or spare parts to let you upgrade your system to the latest revision.

Furthermore, if you wish to purchase your CDTV unit, please let us know. We have arranged special prices for developers.

A FEW HELPFUL HINTS

To locate the revision of your CDTV player motherboard, you do not even have to remove the cover of the system. Look through the metal slots on the top of the unit, just behind the eject button of the CD drive. You will see, in white ink, text saying "PART NO. 252604-01". Just underneath is another line of text, saying "REV. X.X". This is the revision of the motherboard.

To locate the revision of the IR firmware, you must remove the top cover of the CDTV player. With the cover off, look at the front left

FAX

To: Gail WELLINGTON Special Projects fax (1) 215 429 0643

Date: _____

Subj: CDTV player revision sheet

Company name: _____

Contact: _____

Phone: _____ Fax: _____

CDTV player serial number: _____

Revision of motherboard: _____

References on IR firmware chip: _____

_____

	circle one
Are there Flash ROMs in your unit?	YES NO
What kind of video board is installed in the unit?	PAL NTSC NONE
Have you received (and installed) version 1.0 of the Flash ROMs?	YES NO
What type of video signal does your system use? (BOTH means you have installed a PAL/NTSC switch)	PAL NTSC BOTH

Commodore
International Services Corporation

1200 Wilson Drive
West Chester, PA 19380
(215) 431-9100

April 8, 1991

Dear CDTV Developer:

Please find enclosed a revised CDTV Product License Agreement, which reflects changes tothe terms and conditions of the agreement we originallyt distributed that are based upon the suggestions we received from members of the development community. For your convenience a summary of the major changes and a marked copy of the revised agreement reflecting these changes are attached.

Since we had just introduced this agreement, we elected to revise the standard agreement in an effort to keep the agreement uniform for all developers. It is our belief that these changes will be beneficial to the developers in general. We would ask that you review this document, and if you are in agreement with it, execute and return to my attention two copies of the same for acceptance and execution by Commodore. Upon Commodore's execution, a fully signed copy will be returned to you for your records. The revised agreement will replace any other version that you may have previously executed.

Sincerely,

Gail P. Wellington

Gail P. Wellington
Director, Special Projects

GPW:LC

Enc.

Summary of Major Changes

1. The definition of Product has been amended to reference corrections, modifications, improvements and updates [Par 1.2].

2. The definition of Licensed Software has been amended to reference improvements and updates [Par 1.3].

3. The license grant has been amended to allow for the potential modification by the Licensee of the Application Software [Par 2.1].

4. Language has been added to make it clear that the Products manufactured under this Agreement are intended for distribution to end users by the Licensee [Par 2.1].

5. The requirement of a Replication Contract has been eliminated [Par 2.2].

6. The Proprietary Marks paragraph has been liberalized [Par 2.3].

7. Language has been added to further clarify that this Agreement doesn't transfer ownership of the Product to Commodore [Pars 2.4, and 7.0 - 7.4].

8. The term and termination provisions of the Agreement have been modified to provide for a two year term, renewable at Licensee's option [Pars 3.0 - 3.3].

9. The payment provisions of the Agreement have been modified to provide for the quarterly payment of royalties, which will now become due upon shipment of the Products. In addition a "favored licensee" provision has been added [Pars 4.0 - 4.4].

10. The Proprietary Rights Protection and Other Duties sections have been loosened [Pars 5.0 - 6.3].

11. The Limitation of Liability section has been liberalized [Sec 8.0].

12. The Agreement has been modified to permit a limited assignment of the Agreement by the Licensee [Par 10.5].

910307-6

COMMODORE CDTV PRODUCT LICENSE

THIS Agreement is entered into and made effective this ___ day of _____, 199__, by and between Commodore Holding B.V. ("Commodore"), and the LICENSEE identified below.

1.0 DEFINITIONS

1.1 "CDTV Player" means a proprietary system capable of retrieving program information from a CD-ROM, which system is distributed under the trademark "CDTV", and manufactured by Commodore or by a third party under a written license from Commodore.

1.2 "Product" means the work identified in Exhibit 1 (the **"Work"**), as manufactured hereunder in a CD-ROM format compatible with the CDTV Player, together with such corrections, modifications, improvements and updates to the Product that do not substantially alter its original structure, content or functionality.

1.3 "Licensed Software" means those programs which Commodore makes available hereunder for (a) inclusion by LICENSEE in the Product (the **"Application Software"**), (b) LICENSEE's use in preparing and testing the Work to be manufactured hereunder (the **"Utility Software"**), and (c) LICENSEE's use in building a master image of the prepared and tested Work (the **"Mastering Software"**), together with such corrections, modifications, improvements and updates to the Licensed Software which Commodore makes generally available to licensees of the Licensed Software, without separate charge, and including any instructions, user manuals and other related documentation made available by Commodore to facilitate LICENSEE's use of such Licensed Software.

1.4 "Commodore's Proprietary Rights" means any and all patents, copyrights, and trade secrets, owned or controlled by Commodore during the term of this Agreement, which cover inventions, works and processes used or useful in preparing the Product for manufacture and in making the Product compatible with the CDTV Player.

1.5 "Proprietary Marks" means any and all trade names, trademarks, insignias, logos, proprietary marks, and the like identified in Exhibit 1.

2.0 LICENSE GRANTED

2.1 During the term of this Agreement and subject to the conditions herein, Commodore hereby grants to LICENSEE a nontransferable (except as specified in Paragraph 10.5), nonexclusive, license under Commodore's Proprietary Rights to use the Licensed Software, to manufacture copies of the Product in accordance with this Agreement for worldwide distribution to end-users, as follows:

(a) to reproduce and to modify with Commodore's written approval, the Application Software, and to include the same in the Product,

(b) to employ the Utility Software for the sole purpose of preparing and testing the Work for manufacture hereunder,

(c) to employ the Mastering Software for the sole purpose of building a master image of the prepared and tested Work in a format compatible with the CDTV Player, and

(d) to produce for distribution, CD-ROM copies of such master image as is created pursuant to the immediately preceding paragraphs (a) through (c), it being acknowledged by the parties that such copies may be marketed and distributed to end-users and that end-users may use such Licensed Software as has been included in the Product as a result of the manufacture of such Product hereunder.

2.2 Such license to produce copies of the Product master image as is set forth in Paragraph 2.1 (d), above shall include the right to have a third-party contractor replicate such master image.

2.3 During the term of this Agreement and subject to the conditions herein, Commodore hereby grants to LICENSEE the right to use the Proprietary Marks, only in connection with and as reasonably required for, LICENSEE's manufacture, distribution, and promotion of the Product hereunder, provided that LICENSEE's use of Proprietary Marks shall always be in accordance with Commodore's specifications, policies and directions and shall clearly indicate that the same is the property of Commodore or a Commodore affiliated company, as the case may be, and as reasonably directed by Commodore. LICENSEE acknowledges that Commodore may, in its reasonable judgment, at any time object to a specific use or application of any of the Proprietary Marks, specifying the reason for such objection, in which event LICENSEE will immediately cease such use or application thereof, except that LICENSEE may with Commodore's prior permission, which permission shall not be unreasonably withheld, use a reasonable supply of pre-printed materials that have been ordered or are on hand. All use by LICENSEE of such Proprietary Marks shall inure to the benefit of Commodore and its affiliated companies.

2.4 Except for those rights expressly granted above, no other rights or licenses are granted hereunder, by implication or otherwise. All such other rights, including without limitation the title to and ownership of the Licensed Software (including any modifications thereto), Commodore's Proprietary Rights and Proprietary Marks, as well as all rights relating to the CDTV Player are reserved to Commodore, its licensors and suppliers, and except as aforesaid the title to and ownership of the Product are reserved to LICENSEE, its licensors and suppliers.

3.0 TERM AND TERMINATION

3.1 This Agreement shall continue in full force and effect for a period of two (2) years from the effective date hereof and will be renewable for subsequent two year periods at LICENSEE's option, by written notice to Commodore at least thirty (30) days prior to the termination of any such period, provided that this Agreement shall automatically sooner terminate if LICENSEE fails to publish the Product within a twelve (12) month period following such effective date, or fails to continue to distribute such Product for any period in excess of nine (9) consecutive months, or unless terminated earlier as set forth below.

3.2 In addition to any other remedy which it may have at law or in equity, either party may immediately terminate this Agreement if the other party (a) materially breaches or fails to perform any of its obligations hereunder and if such breach or failure is not capable of being corrected, or if such breach or failure, though correctable, is not corrected within thirty (30) days of notice thereof from the non-breaching party, or (b) becomes insolvent or admits in writing its inability to pay its debts as they mature, or (c) files a voluntary petition in bankruptcy, makes an assignment for the benefit of creditors or has filed against it a petition under any bankruptcy law (and the same is not dismissed within sixty (60) days). Nothing herein shall prevent either party from seeking immediate injunctive relief or other appropriate remedy in the event of the other party's failure to comply with its obligations under Paragraphs 5.1 through 5.5 of this Agreement, the failure to comply with such obligations being deemed not correctable.

3.3 LICENSEE may terminate this Agreement at any time and without cause, upon sixty (60) days written notice to Commodore, providing LICENSEE is not in breach of any of the terms of this Agreement and is current with respect to all payments due hereunder. LICENSEE will remain obligated to pay all accrued amounts that become due and payable to Commodore after any such termination.

4.0 PAYMENTS

4.1 In consideration of the licenses and rights granted hereunder by Commodore, LICENSEE agrees to pay to Commodore the unit license fee set forth in Exhibit 1 ("License Fee"), for each unit of Product that is shipped to its customers. Such License Fee shall be payable in accordance with the provisions of Paragraph 4.2 of this Agreement.

4.2 Within twenty (20) days after the end of each calendar quarter ending after the date on which Products are first shipped, LICENSEE shall furnish to Commodore, a written report setting forth the quantity of Products shipped during such quarter and the computation of the aggregate License Fee payable with respect thereto as calculated using the per unit License Fee set forth in Exhibit 1. Each report shall be accompanied by a payment in the amount of the aggregate License Fees due with respect to that month. Commodore shall be entitled to receive interest on any late payments hereunder at a rate of 1 1/2% per month or such lesser rate, if any, as may be required by law.

4.3 LICENSEE shall keep books and records in sufficient detail to permit ready and accurate determination of any License Fees payable by it hereunder. Commodore shall have the right, on one occasion per calendar quarter on not less than seven (7) business days' prior notice, to cause its own accountants or any independent certified public accountant or firm of such accountants to audit such books and records to verify any such determination. Licensee shall provide all reasonable cooperation. Commodore shall pay all costs of such accountants unless such audit determines an unremedied underpayment to Commodore of more than 10% of the aggregate amount properly due to Commodore as revealed by the audit. In such event LICENSEE shall pay all such costs.

4.4 If Commodore shall grant a license with a scope and on terms and conditions substantially equivalent to that set forth herein at a royalty rate more favorable than that provided in this Agreement, then LICENSEE shall be entitled to receive the same favorable royalty rate, subject to the terms and conditions under which such more favorable royalty rate was granted, provided that this paragraph shall not be construed to apply to licenses granted for other than monetary consideration.

5.0 PROPRIETARY RIGHTS PROTECTION

5.1 Each party acknowledges that by virtue of this Agreement, it may gain access to information that is confidential and/or proprietary to the other party and that is so marked in writing, including without limitation, the Product, the Work, the Licensed Software and other trade secrets related to the CDTV Player and the manufacture of Products compatible therewith("Confidential Information"). For three (3) years from the effective date of this Agreement the party gaining access to (the "Recipient") Confidential Information hereunder, will use all reasonable efforts, but not less than the same degree of care it employs with its own like confidential information, to maintain in confidence all Confidential Information, to avoid disclosing the same to any third party, and to avoid using or permitting others to use the same, commercially or otherwise, in any manner contrary to the purposes of this Agreement or the best interests of the other party.

5.2 Recipient shall only disclose Confidential Information to those of its employees who have a need to know the same in order to accomplish the purposes of this Agreement. Prior to disclosing any Confidential Information hereunder, Recipient shall inform such employees who are to have access to the Confidential Information, of Recipient's limitations, duties and obligations regarding the use, nondisclosure and copying of the Confidential Information and shall obtain the written agreement of such employees to comply with those limitations, duties and obligations. The Recipient shall maintain records of its employees having access to the Confidential Information. Upon reasonable notice to the Recipient the party disclosing Confidential Information may audit such records.

5.3 Notwithstanding the above, Recipient shall have no obligation with respect to any information which: (1) was already known to Recipient at the time of receipt hereunder; (2) is or becomes public or rightfully received by the Recipient from a third party without similar restriction and without breach hereof; (3) is independently developed by the Recipient without benefit of any disclosure hereunder, or (4) is approved for release by written authorization of the disclosing party.

5.4 Upon proper termination of this Agreement by either party, use of all Licensed Software, Commodore's Proprietary Rights and Proprietary Marks by LICENSEE shall be discontinued, and the licenses and rights granted hereunder (except with respect to end-users of the Products shipped prior to such termination) shall expire and LICENSEE shall have no further rights or access to the Licensed Software, Commodore's Proprietary Information and Proprietary Marks. Within thirty (30) days after any such termination of this Agreement all copies of the Licensed Software (except as has been properly included in the Product hereunder) and all other materials containing any copy of any Confidential Information shall be returned to Commodore, or destroyed on Commodore's written instructions. If such termination is not a result of any breach of this Agreement by LICENSEE, LICENSEE may continue to distribute such Products as have been manufactured hereunder prior to such termination providing LICENSEE shall remain obligated to pay the License Fee for each unit of Product shipped.

5.5 LICENSEE shall not disassemble, decompile or otherwise reverse engineer the Licensed Software.

5.6 LICENSEE shall not remove or otherwise obliterate any trademark, patent, copyright or other proprietary rights notices or markings included on or in the Licensed Software, such Product master image as is prepared by the use of the Licensed Software, or any other materials supplied to LICENSEE hereunder, and shall reproduce and apply any of the same in and to any copies of such Licensed Software, Products and materials, in whole or in part, and in any form.

5.7 Notwithstanding any termination of this Agreement, any remaining obligations of the parties as set forth in this Section 5 shall survive this Agreement.

6.0 OTHER DUTIES AND OBLIGATIONS OF LICENSEE

6.1 Within ten (10) days after the initial manufacture of CD-ROM copies of the Product, LICENSEE shall cause to be furnished to Commodore at no additional charge to Commodore, to the attention of CDTV Products Coordinator, c/o Commodore International, 1200 Wilson Drive, West Chester, PA. 19380, or such other address as is specified by Commodore in writing, ten CD-ROM copies of such Product as has been manufactured hereunder, including such end-user documentation and materials as are to be generally furnished with the Product, provided that as a condition precedent, Commodore enter into LICENSEE's standard end user license agreement covering such copies and materials. Such copies may be retained by Commodore, subject to such license agreement.

6.2 LICENSEE shall use all reasonable efforts to comply with such quality control standards, user interface standards and disc packaging standards as are generally promulgated by Commodore with respect to products for the CDTV Player, provided that such standards are reasonably promulgated by Commodore, are appropriate to the particular product, and are given to LICENSEE in a timely manner. LICENSEE will promptly notify Commodore regarding any aspects of the Product for which LICENSEE will not substantially comply with any such standards that are in effect at the time LICENSEE releases the Product to manufacturing.

6.3 LICENSEE shall ensure that the Product manufactured hereunder is a professional, high quality product that LICENSEE reasonably and in good faith believes will not diminish or otherwise negatively affect the reputation and good will associated with Commodore and the Commodore Proprietary Marks licensed hereunder.

7.0 WARRANTIES

7.1 Commodore hereby warrants that it (a) has the right and power to enter into this Agreement and (b) owns or possesses from others (i) all right, title and interest in and to the Licensed Software, Commodore's Proprietary Rights, Proprietary Marks and CDTV Player, and (ii) the right to grant the rights and licenses set forth herein.

7.2 The Licensed Software and other materials provided by Commodore to LICENSEE hereunder are provided on an "AS IS" basis, without any warranty of any kind except as provided in Paragraph 7.1, above.

7.3 Except with respect to the Licensed Software, Commodore's Proprietary Rights and Proprietary Marks, which are included in the Product (and which are the subject of the Commodore warranty as set forth above), LICENSEE hereby warrants that it possesses sufficient right, title and interest in and to the Product, to reproduce, display and perform such Product, and to authorize others to so reproduce, display and perform the Product as is required by this Agreement. Except with respect to such Licensed Software, Commodore's Proprietary Rights and Proprietary Marks, which are included in the Product LICENSEE shall be solely responsible hereunder for obtaining such right, title and interest in and to the Product, and the continuance of such warranty shall be a condition precedent to such license grants as are made by Commodore herein.

7.4 NEITHER LICENSEE OR COMMODORE MAKE ANY OTHER EXPRESS OR IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE.

8.0 LIMITATION OF LIABILITY

8.1 IN NO EVENT WILL EITHER PARTY BE LIABLE FOR ANY LOST REVENUES OR PROFITS, OR OTHER SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

9.0 TAXES

All payments required under Section 4.0 or otherwise under this Agreement are exclusive of withholding and other taxes, and LICENSEE agrees to bear and be responsible for the payment of all such taxes, including, but not limited to, all sales, use, rental receipt, personal property or other taxes which may be levied or assessed in connection with this Agreement and excluding only such taxes as are based upon Commodore's income.

10.0 MISCELLANEOUS

10.1 All notices and other communications hereunder shall be in writing and effective when personally delivered, or transmitted by telephone facsimile with a confirmation copy by U.S. first class air mail or foreign equivalent, to a party at its address or addresses and facsimile numbers set forth below, or to such other address or addresses as such party shall have last notified to the other. If mailed, such notice shall be deemed received by the close of business on the date shown on the certified or registered mail receipt, or when it is actually received, whichever is sooner.

10.2 If any of the provisions, or portions thereof, of this Agreement are invalid under any applicable statute or rule of law, then, that provision notwithstanding, this Agreement shall remain in full force and effect and such provision shall be deemed omitted.

10.3 This Agreement and the attached Exhibit 1 which is incorporated herein by reference, constitute and express the final, entire and exclusive agreement and understanding between the parties and supersedes all previous communications, representations or agreements, whether written or oral, with respect to the subject matter hereof.

10.4 This Agreement may not be modified, amended, rescinded, canceled or waived, in whole or in part, except by a written instrument signed by the parties.

10.5 Except in connection with the sale of all or substantially all of LICENSEE's assets, or the sale or transfer of a product line that includes the Product, or the sale of LICENSEE or its business (by merger or otherwise), any of which may be done without the consent of Commodore, this Agreement, including any licenses and rights granted hereunder, may not be sold, leased, assigned, sublicensed (except as specified in paragraph 2.2) or otherwise transferred, in whole or in part, by LICENSEE, without the prior consent of Commodore, which shall not be unreasonably withheld or delayed. This Agreement shall inure to the benefit of and be binding on any third party's successor or any party to whom a transfer hereunder is permitted.

10.6 This Agreement is made under and shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania, excluding its conflicts of law provisions. The parties agree to submit to the exclusive jurisdiction of the appropriate courts located in Pennsylvania for the purpose of any suit, action or other proceeding in connection with this Agreement.

10.7 All payments hereunder shall be made in U.S. Dollars by wire transfer or by check addressed to the payee by U.S. first class air mail (or foreign equivalent) at the payee's applicable address set forth in Exhibit 1.

10.8 In addition to any other relief, the prevailing party in any action arising out of this Agreement shall be entitled to reasonable attorneys' fees and costs.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives.

COMMODORE HOLDING B.V.

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

LICENSEE

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

EXHIBIT 1

The Exhibit is attached to and made a part of that Agreement between Commodore Holding B.V. [] and _____ ("LICENSEE") dated and effective _____, 19___.

LICENSEE: _____
Address: _____
_____
_____

WORK: ← [] _____
Description: _____

[ ] _____

UNIT LICENSE FEE: Twenty-five ($.25) cents

← []

PROPRIETARY MARKS:

CDTV and the CDTV logo

PAYMENTS SHALL BE MADE TO: [] Commodore Holding B.V., c/o Commodore Business Machines, Inc., P.O. Box 7777-W6300, Philadelphia, PA 19175

COMMODORE HOLDING B.V.

By: _____
Name: _____
Title: _____
[**Address:** _____
[**Fax No.:** _____
Date: _____

LICENSEE

By: _____
Name: _____
Title: _____
[Address: _____
[Fax No.: _____
Date: _____

RJG/1604:smk

Exhibit 2 is deleted

Contents of CDTV Tools Disks, by topic

as of 2/14/91

Audio

(Source, includes, and executables)

PlayTrack -- a very simple CD audio player.
NoReset -- prevents the SYSTEM RESET that occurs when a CD is ejected.
DumpSector -- performs a byte dump of a given CD sector.
Audio2 - 8SVX example
BetaSystemChanges -- Change for ROM version 2.3.
cdtv.h -- CD Device Driver Include File
CV -- A utility to convert a Macintosh sampled SND file to an Amiga raw.
Example.c - Examples of a few simple CD Audio commands on CDTV.

Compression

```
debox.h                         ; Headers for C (.h) and Asm (.i) code.
debox.i
deboxfunc.i
deboxpragma.h
deboxproto.h

debox_lib.fd            ; Standard library information.
debox.doc               ; Complete AutoDoc printing of all DeBox
                        ; function calls.  To spec.
debox.library                   ; Library (Protected)
deboxROM.library        ; ROMable library.
DeBox                   ; CLI-driven SBox file checker.  Includes
                        ; decompression times. (Protected).
DeShow                          ; CLI-driven SBox picture display program.
                        ; (Protected)
SBox                    ; CLI-driven file compressor.  Documentation
                        ; provided at prompt. (Protected)
Makefile                ; Makefile for Lattice (SAS) compiler, to
                        ; complile simple.c.
simple.c                ; Demonstration program.  Displays one
                        ; picture.
Simple                          ; An executable version of simple.
```

Debug

autodoc- Extracts autodocs from source code.
bumprev- Bumps the revision in an xxx_rev.h or .i file.
charset- Printf's a table of the Amiga character set.
complainer and complainer.par- A3000 MMU watchdog.
cputrap and cputrap.par- A2500 MMU watchdog traps.
config- Displays system configuration.
configdev- Lists every last detail about every AutoConfig.
crash3, crash4, crash5, crash8, crasha- Little programs to crash machine
devlist- Lists all currently loaded/available devices in the system.
devmon- Exec device monitor.
disked- Sector editor documented in Bantam AmigaDOS manual.

doslist- Lists all dos device and volume environment information.
drip- A classic memory loss tool.
eatcycles- Bogs down the processor to simulate heavy multitasking loads.
eatmem- Great gadtools-interface memory control panel.
enforcer and enforcer.par- MMU watchdog. Works under 2.0 and 1.3.
flush- Forces currently unopened ram-resident libraries out of the system.
frags- Shows summary of memory fragmentation.
intlist- System interrupt lister.
io_torture- Device IO watchdog.
lawbreaker- Test MMU debugging tool and remote setup.
liblist- Lists all currently loaded/available libraries in the system.
lvo- Gives the LVO offset of a function.
memlist- Displays all of the system's memory areas and free memory lists.
memmon- Simple memory monitor.
memmung- Freed memory invalidation tool.
mks_lens- A magnifying-glass for for screen text and graphics.
modlist- Lists all of the resident modules in the system.
mungwall- Memory usage checking program.
owner- Searches exec lists trying to find owner of a piece of memory.
peek, poke- Peek or poke memory.
printertest- Printer driver test for printer driver writers.
readpixel- Click on pixels to find out their pen number.
romwack- Enters the rom-based system serial debugger,
settaskname- Change the name of a CLI to any same or shorter length name.
showgfxbase- Shows some popular GfxBase variables.
showlocks- Shows the outstanding locks on a volume.
snoop- Snoop reports serially on all memory allocations and deallocations.
snoopstrip- Analyzes Snoop output.
sparemem- Lets you reduce free memory TO a certain amount or BY a certain amount.
srt- Traps Software Error requesters.
tasklist- Lists all tasks in the system and their addresses.
tnt- Installs (or removes) a special task trap handler.
tstat- Displays information about tasks.
wack, wack1.0- Symbolic debuggers. See wack.doc.
watchmem- Spots trashing of low memory on systems without an MMU.
wedge- Lets you wedge into just about any system function.
winlist- Lists all screens and windows in the system.

fonts

Helv 18 and 25 point fonts, from Xiphias

MemCard
---

memcard_Boot- Tests for access to mem_card, and boots
BLoad- loads binary images
MakeBin- makes binary image

NTSC-PAL

BootPAL- installs changes to convert the machine to PAL
BootNTSC- installs changes to convert the machine to NTSC
NTSC- switches to NTSC screens
PAL- switches to PAL screens
platest.c- check for PAL machine

Prefs
-----

getprefs - get CDTV preference settings
setprefs - test code to set preferences, not for applications
bookmark - example bookmark access**
readfile - a technique for reading files directly from CD-ROM
includes - a directory containing the latest include files
      cdtv.h
      cdtvprefs.h
CDTVPrefs - centers screen based on prefs.

CDTV MARKETING INFORMATION
CDTV PRODUCT CATALOGS

A number of catalogs are under preparation for CDTV titles. You may want to contact the following organisations to help promote your title:

1) **Commodore's "CDTV Multimedia Catalog of Titles".** This catalog is shipped in the box with every CDTV player. Contact:

Roy Strauss
Special Projects
Commodore International
1200 Wilson Drive
West Chester, PA 19380
tel. 1-215-431-9100
fax 1-215-429-0643

2) **AmigaWorld's "CDTV Product Showcase".** The June issue of AmigaWorld will have a special section on CDTV Multimedia. The cover story will be accompanied by the Product Showcase, where you can advertise your products. Prices start at $975 per 1/6 page. Contacts:

Michael McGoldrick	800-441-4403	East, Midwest, and Southeast
Heather Guinard		Partial pages, InfoMarket
Giorgio Saluti	415-363-5230	Western Region

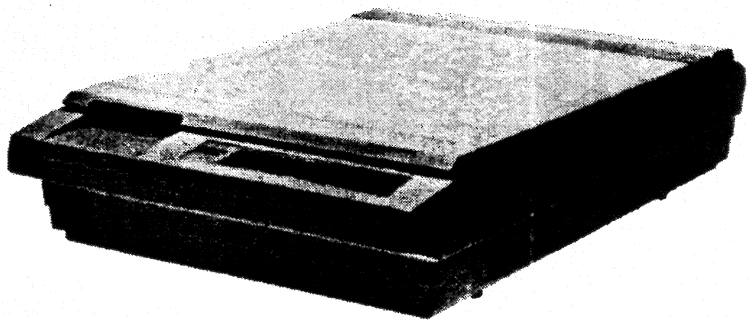
3) **TFPL's CD-ROM Directory.** TFPL publishes their CD-ROM directory on paper and on disc. It gaves individual listings to all CD-ROM, DVI, CD-I and CDTV discs produced, with full information regarding subject, cost, availability, publisher, distributer, etc. The latest Directory lists over 1500 discs. Next edition: July 1991. Contact:

Joanne Mitchell
TFPL Ltd
22 Peters Lane
London EC1M 6DS
UK
tel. (44) 71 251 5522
fax (44) 71 251 8318

4) **Amazing Computing's AC's Guide.** The next AC's Guide will include full coverage of the CDTV player and titles. There is no charge for a basic listing, and it is a good way to get your products seen by the maximum amount of Amiga users. Contact:

Don Hicks
Amazing Computing
PO Box 869
Fall River, MA 02722
tel 1-800-345-3360
tel 1-508-678-4200
fax 1-508-675-6002

Scan Master-CG3600 & Image Master



- **300 DPI Resolution**
- **24 Bit Color, 256 Gray Scale**
- **Full Amiga Compatiblity**
- **Fast Scanning Time**
- **Parallel Interface Standard**
- **High-Quality Image Output**

Technical Specifications

Dimensions	12.6" x 20.1" x 4.8"
Weight	19.8 lbs
Scanning System	Flatbed
Document Size	Max 8.5" x 11.67"
Scanning Area	Max 8.5" x 12
Scanning Time	~30 seconds (A4/300 DPI)
Brightness	Seven Levels
Contrast	Seven Levels
Grayscale	8 bits per pixel (256 levels)
Color	24 bits (16.7 million colors)
Color separation	Via switching RGB source
Light source	Noble gas fluorescent lamp
Output Resolution	Vert. 300 x Horiz. 300
Variable Pitch	From 50 to 600 DPI
Zoom	50% to 200% in 1% steps
Gamma correction	Two for CRT, three for printer
Color correction	One for CRT, three for printer
Interface	Bi-Directional parallel
Power Consumption	Max 40 watts
Power Source	AC 87.5-138v, 50-60hz
	Also European Standard

Recommended Configuration

Amiga with at least 1 Meg of main memory, hard disk, WorkBench 1.3 or 2.0.

Additional memory, up to 24 Megs, is supported for full scan directly to RAM. Software will scan to disk file otherwise.

24 Bit Color, 256 Grayscale

With 24-Bit color scanning, Scan Master is capable of producing 16.7 million colors. Scan Master easily switches to gray-scale mode, offering 8-Bit monochrome scanning to produce 256 levels of gray, for both Color or Gray Scale Scanning.

Scan Master gives you great resolution at 300 dots per inch (DPI). You can modify output resolution from 50 to 600 dots per inch to match most monitors and printers.

Single-pass Scanning

For better-quality images and accurate colors, Scan Master uses single-pass scanning. Scan Master can handle images up to 8.5 X 11.7 inches, as well as the European letter size A4.

Scan Master has advanced built in image-processing features, such as five Gamma Correction settings to maximize image quality.

Image Master Scanning Software

A professional Amiga software utility to allow you to bring in and store 24-bit images and apply special effects. With Image Master you can rotate, flip and blur or sharpen scanned images. Image Master allows you to control saturation, brightness and color. You can perform color separation and define the CYM or CYMK colors for color-printing applications.

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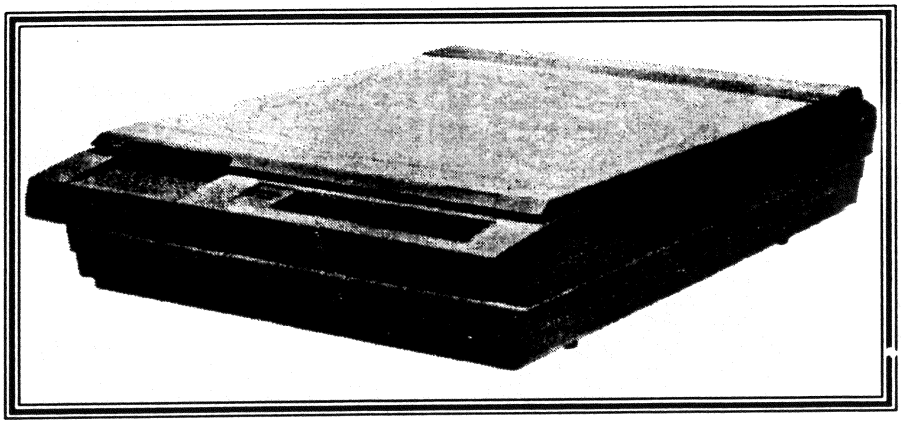

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910307-6

COMMODORE CDTV PRODUCT LICENSE

THIS Agreement is entered into and made effective this ___ day of _____, 199__, by and between Commodore Holding B.V. ("Commodore"), and the LICENSEE identified below.

1.0 DEFINITIONS

1.1 "CDTV Player" means a proprietary system capable of retrieving program information from a CD-ROM, which system is distributed under the trademark "CDTV", and manufactured by Commodore or by a third party under a written license from Commodore.

1.2 "Product" means the work identified in Exhibit 1 (the **"Work"**), as manufactured hereunder in a CD-ROM format compatible with the CDTV Player, together with such corrections, modifications, improvements and updates to the Product that do not substantially alter its original structure, content or functionality.

1.3 "Licensed Software" means those programs which Commodore makes available hereunder for (a) inclusion by LICENSEE in the Product (the **"Application Software"**), (b) LICENSEE's use in preparing and testing the Work to be manufactured hereunder (the **"Utility Software"**), and (c) LICENSEE's use in building a master image of the prepared and tested Work (the **"Mastering Software"**), together with such corrections, modifications, improvements and updates to the Licensed Software which Commodore makes generally available to licensees of the Licensed Software, without separate charge, and including any instructions, user manuals and other related documentation made available by Commodore to facilitate LICENSEE's use of such Licensed Software.

1.4 "Commodore's Proprietary Rights" means any and all patents, copyrights, and trade secrets, owned or controlled by Commodore during the term of this Agreement, which cover inventions, works and processes used or useful in preparing the Product for manufacture and in making the Product compatible with the CDTV Player.

1.5 "Proprietary Marks" means any and all trade names, trademarks, insignias, logos, proprietary marks, and the like identified in Exhibit 1.

2.0 LICENSE GRANTED

2.1 During the term of this Agreement and subject to the conditions herein, Commodore hereby grants to LICENSEE a nontransferable (except as specified in Paragraph 10.5), nonexclusive, license under Commodore's Proprietary Rights to use the Licensed Software, to manufacture copies of the Product in accordance with this Agreement for worldwide distribution to end-users, as follows:

(a) to reproduce and to modify with Commodore's written approval, the Application Software, and to include the same in the Product,

(b) to employ the Utility Software for the sole purpose of preparing and testing the Work for manufacture hereunder,

(c) to employ the Mastering Software for the sole purpose of building a master image of the prepared and tested Work in a format compatible with the CDTV Player, and

(d) to produce for distribution, CD-ROM copies of such master image as is created pursuant to the immediately preceding paragraphs (a) through (c), it being acknowledged by the parties that such copies may be marketed and distributed to end-users and that end-users may use such Licensed Software as has been included in the Product as a result of the manufacture of such Product hereunder.

2.2 Such license to produce copies of the Product master image as is set forth in Paragraph 2.1 (d), above shall include the right to have a third-party contractor replicate such master image.

2.3 During the term of this Agreement and subject to the conditions herein, Commodore hereby grants to LICENSEE the right to use the Proprietary Marks, only in connection with and as reasonably required for, LICENSEE's manufacture, distribution, and promotion of the Product hereunder, provided that LICENSEE's use of Proprietary Marks shall always be in accordance with Commodore's specifications, policies and directions and shall clearly indicate that the same is the property of Commodore or a Commodore affiliated company, as the case may be, and as reasonably directed by Commodore. LICENSEE acknowledges that Commodore may, in its reasonable judgment, at any time object to a specific use or application of any of the Proprietary Marks, specifying the reason for such objection, in which event LICENSEE will immediately cease such use or application thereof, except that LICENSEE may with Commodore's prior permission, which permission shall not be unreasonably withheld, use a reasonable supply of pre-printed materials that have been ordered or are on hand. All use by LICENSEE of such Proprietary Marks shall inure to the benefit of Commodore and its affiliated companies.

2.4 Except for those rights expressly granted above, no other rights or licenses are granted hereunder, by implication or otherwise. All such other rights, including without limitation the title to and ownership of the Licensed Software (including any modifications thereto), Commodore's Proprietary Rights and Proprietary Marks, as well as all rights relating to the CDTV Player are reserved to Commodore, its licensors and suppliers, and except as aforesaid the title to and ownership of the Product are reserved to LICENSEE, its licensors and suppliers.

3.0 TERM AND TERMINATION

3.1 This Agreement shall continue in full force and effect for a period of two (2) years from the effective date hereof and will be renewable for subsequent two year periods at LICENSEE's option, by written notice to Commodore at least thirty (30) days prior to the termination of any such period, provided that this Agreement shall automatically sooner terminate if LICENSEE fails to publish the Product within a twelve (12) month period following such effective date, or fails to continue to distribute such Product for any period in excess of nine (9) consecutive months, or unless terminated earlier as set forth below.

3.2 In addition to any other remedy which it may have at law or in equity, either party may immediately terminate this Agreement if the other party (a) materially breaches or fails to perform any of its obligations hereunder and if such breach or failure is not capable of being corrected, or if such breach or failure, though correctable, is not corrected within thirty (30) days of notice thereof from the non-breaching party, or (b) becomes insolvent or admits in writing its inability to pay its debts as they mature, or (c) files a voluntary petition in bankruptcy, makes an assignment for the benefit of creditors or has filed against it a petition under any bankruptcy law (and the same is not dismissed within sixty (60) days). Nothing herein shall prevent either party from seeking immediate injunctive relief or other appropriate remedy in the event of the other party's failure to comply with its obligations under Paragraphs 5.1 through 5.5 of this Agreement, the failure to comply with such obligations being deemed not correctable.

3.3 LICENSEE may terminate this Agreement at any time and without cause, upon sixty (60) days written notice to Commodore, providing LICENSEE is not in breach of any of the terms of this Agreement and is current with respect to all payments due hereunder. LICENSEE will remain obligated to pay all accrued amounts that become due and payable to Commodore after any such termination.

4.0 PAYMENTS

4.1 In consideration of the licenses and rights granted hereunder by Commodore, LICENSEE agrees to pay to Commodore the unit license fee set forth in Exhibit 1 ("License Fee"), for each unit of Product that is shipped to its customers. Such License Fee shall be payable in accordance with the provisions of Paragraph 4.2 of this Agreement.

4.2 Within twenty (20) days after the end of each calendar quarter ending after the date on which Products are first shipped, LICENSEE shall furnish to Commodore, a written report setting forth the quantity of Products shipped during such quarter and the computation of the aggregate License Fee payable with respect thereto as calculated using the per unit License Fee set forth in Exhibit 1. Each report shall be accompanied by a payment in the amount of the aggregate License Fees due with respect to that quarter. Commodore shall be entitled to receive interest on any late payments hereunder at a rate of 1 1/2% per month or such lesser rate, if any, as may be required by law.

4.3 LICENSEE shall keep books and records in sufficient detail to permit ready and accurate determination of any License Fees payable by it hereunder. Commodore shall have the right, on one occasion per calendar quarter on not less than seven (7) business days' prior notice, to cause its own accountants or any independent certified public accountant or firm of such accountants to audit such books and records to verify any such determination. Licensee shall provide all reasonable cooperation. Commodore shall pay all costs of such accountants unless such audit determines an unremedied underpayment to Commodore of more than 10% of the aggregate amount properly due to Commodore as revealed by the audit. In such event LICENSEE shall pay all such costs.

4.4 If Commodore shall grant a license with a scope and on terms and conditions substantially equivalent to that set forth herein at a royalty rate more favorable than that provided in this Agreement, then LICENSEE shall be entitled to receive the same favorable royalty rate, subject to the terms and conditions under which such more favorable royalty rate was granted, provided that this paragraph shall not be construed to apply to licenses granted for other than monetary consideration.

5.0 PROPRIETARY RIGHTS PROTECTION

5.1 Each party acknowledges that by virtue of this Agreement, it may gain access to information that is confidential and/or proprietary to the other party and that is so marked in writing, including without limitation, the Product, the Work, the Licensed Software and other trade secrets related to the CDTV Player and the manufacture of Products compatible therewith("Confidential Information"). For three (3) years from the effective date of this Agreement the party gaining access to (the "Recipient") Confidential Information hereunder, will use all reasonable efforts, but not less than the same degree of care it employs with its own like confidential information, to maintain in confidence all Confidential Information, to avoid disclosing the same to any third party, and to avoid using or permitting others to use the same, commercially or otherwise, in any manner contrary to the purposes of this Agreement or the best interests of the other party.

5.2 Recipient shall only disclose Confidential Information to those of its employees who have a need to know the same in order to accomplish the purposes of this Agreement. Prior to disclosing any Confidential Information hereunder, Recipient shall inform such employees who are to have access to the Confidential Information, of Recipient's limitations, duties and obligations regarding the use, nondisclosure and copying of the Confidential Information and shall obtain the written agreement of such employees to comply with those limitations, duties and obligations. The Recipient shall maintain records of its employees having access to the Confidential Information. Upon reasonable notice to the Recipient the party disclosing Confidential Information may audit such records.

5.3 Notwithstanding the above, Recipient shall have no obligation with respect to any information which: (1) was already known to Recipient at the time of receipt hereunder; (2) is or becomes public or rightfully received by the Recipient from a third party without similar restriction and without breach hereof; (3) is independently developed by the Recipient without benefit of any disclosure hereunder, or (4) is approved for release by written authorization of the disclosing party.

5.4 Upon proper termination of this Agreement by either party, use of all Licensed Software, Commodore's Proprietary Rights and Proprietary Marks by LICENSEE shall be discontinued, and the licenses and rights granted hereunder (except with respect to end-users of the Products shipped prior to such termination) shall expire and LICENSEE shall have no further rights or access to the Licensed Software, Commodore's Proprietary Information and Proprietary Marks. Within thirty (30) days after any such termination of this Agreement all copies of the Licensed Software (except as has been properly included in the Product hereunder) and all other materials containing any copy of any Confidential Information shall be returned to Commodore, or destroyed on Commodore's written instructions. If such termination is not a result of any breach of this Agreement by LICENSEE, LICENSEE may continue to distribute such Products as have been manufactured hereunder prior to such termination providing LICENSEE shall remain obligated to pay the License Fee for each unit of Product shipped.

5.5 LICENSEE shall not disassemble, decompile or otherwise reverse engineer the Licensed Software.

5.6 LICENSEE shall not remove or otherwise obliterate any trademark, patent, copyright or other proprietary rights notices or markings included on or in the Licensed Software, such Product master image as is prepared by the use of the Licensed Software, or any other materials supplied to LICENSEE hereunder, and shall reproduce and apply any of the same in and to any copies of such Licensed Software, Products and materials, in whole or in part, and in any form.

5.7 Notwithstanding any termination of this Agreement, any remaining obligations of the parties as set forth in this Section 5 shall survive this Agreement.

6.0 OTHER DUTIES AND OBLIGATIONS OF LICENSEE

6.1 Within ten (10) days after the initial manufacture of CD-ROM copies of the Product, LICENSEE shall cause to be furnished to Commodore at no additional charge to Commodore, to the attention of CDTV Products Coordinator, c/o Commodore International, 1200 Wilson Drive, West Chester, PA. 19380, or such other address as is specified by Commodore in writing, ten CD-ROM copies of such Product as has been manufactured hereunder, including such end-user documentation and materials as are to be generally furnished with the Product, provided that as a condition precedent, Commodore enter into LICENSEE's standard end user license agreement covering such copies and materials. Such copies may be retained by Commodore, subject to such license agreement.

6.2 LICENSEE shall use all reasonable efforts to comply with such quality control standards, user interface standards and disc packaging standards as are generally promulgated by Commodore with respect to products for the CDTV Player, provided that such standards are reasonably promulgated by Commodore, are appropriate to the particular product, and are given to LICENSEE in a timely manner. LICENSEE will promptly notify Commodore regarding any aspects of the Product for which LICENSEE will not substantially comply with any such standards that are in effect at the time LICENSEE releases the Product to manufacturing.

6.3 LICENSEE shall ensure that the Product manufactured hereunder is a professional, high quality product that LICENSEE reasonably and in good faith believes will not diminish or otherwise negatively affect the reputation and good will associated with Commodore and the Commodore Proprietary Marks licensed hereunder.

7.0 WARRANTIES

7.1 Commodore hereby warrants that it (a) has the right and power to enter into this Agreement and (b) owns or possesses from others (i) all right, title and interest in and to the Licensed Software, Commodore's Proprietary Rights, Proprietary Marks and CDTV Player, and (ii) the right to grant the rights and licenses set forth herein.

7.2 The Licensed Software and other materials provided by Commodore to LICENSEE hereunder are provided on an "AS IS" basis, without any warranty of any kind except as provided in Paragraph 7.1, above.

7.3 Except with respect to the Licensed Software, Commodore's Proprietary Rights and Proprietary Marks, which are included in the Product (and which are the subject of the Commodore warranty as set forth above), LICENSEE hereby warrants that it possesses sufficient right, title and interest in and to the Product, to reproduce, display and perform such Product, and to authorize others to so reproduce, display and perform the Product as is required by this Agreement. Except with respect to such Licensed Software, Commodore's Proprietary Rights and Proprietary Marks, which are included in the Product LICENSEE shall be solely responsible hereunder for obtaining such right, title and interest in and to the Product, and the continuance of such warranty shall be a condition precedent to such license grants as are made by Commodore herein.

7.4 NEITHER LICENSEE OR COMMODORE MAKE ANY OTHER EXPRESS OR IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE.

8.0 LIMITATION OF LIABILITY

8.1 IN NO EVENT WILL EITHER PARTY BE LIABLE FOR ANY LOST REVENUES OR PROFITS, OR OTHER SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

9.0 TAXES

All payments required under Section 4.0 or otherwise under this Agreement are exclusive of withholding and other taxes, and LICENSEE agrees to bear and be responsible for the payment of all such taxes, including, but not limited to, all sales, use, rental receipt, personal property or other taxes which may be levied or assessed in connection with this Agreement and excluding only such taxes as are based upon Commodore's income.

10.0 MISCELLANEOUS

10.1 All notices and other communications hereunder shall be in writing and effective when personally delivered, or transmitted by telephone facsimile with a confirmation copy by U.S. first class air mail or foreign equivalent, to a party at its address or addresses and facsimile numbers set forth below, or to such other address or addresses as such party shall have last notified to the other. If mailed, such notice shall be deemed received by the close of business on the date shown on the certified or registered mail receipt, or when it is actually received, whichever is sooner.

10.2 If any of the provisions, or portions thereof, of this Agreement are invalid under any applicable statute or rule of law, then, that provision notwithstanding, this Agreement shall remain in full force and effect and such provision shall be deemed omitted.

10.3 This Agreement and the attached Exhibit 1 which is incorporated herein by reference, constitute and express the final, entire and exclusive agreement and understanding between the parties and supersedes all previous communications, representations or agreements, whether written or oral, with respect to the subject matter hereof.

10.4 This Agreement may not be modified, amended, rescinded, canceled or waived, in whole or in part, except by a written instrument signed by the parties.

10.5 Except in connection with the sale of all or substantially all of LICENSEE's assets, or the sale or transfer of a product line that includes the Product, or the sale of LICENSEE or its business (by merger or otherwise), any of which may be done without the consent of Commodore, this Agreement, including any licenses and rights granted hereunder, may not be sold, leased, assigned, sublicensed (except as specified in paragraph 2.2) or otherwise transferred, in whole or in part, by LICENSEE, without the prior consent of Commodore, which shall not be unreasonably withheld or delayed. This Agreement shall inure to the benefit of and be binding on any third party's successor or any party to whom a transfer hereunder is permitted.

10.6 This Agreement is made under and shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania, excluding its conflicts of law provisions. The parties agree to submit to the exclusive jurisdiction of the appropriate courts located in Pennsylvania for the purpose of any suit, action or other proceeding in connection with this Agreement.

10.7 All payments hereunder shall be made in U.S. Dollars by wire transfer or by check addressed to the payee by U.S. first class air mail (or foreign equivalent) at the payee's applicable address set forth in Exhibit 1.

10.8 In addition to any other relief, the prevailing party in any action arising out of this Agreement shall be entitled to reasonable attorneys' fees and costs.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives.

COMMODORE HOLDING B.V.

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

LICENSEE

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

EXHIBIT 1

The Exhibit is attached to and made a part of that Agreement between Commodore Holding B.V. and _____ ("LICENSEE") dated and effective _____, 19___.

LICENSEE:_____
Address:_____
_____
_____

WORK:

Description:_____
_____

UNIT LICENSE FEE: Twenty-five ($.25) cents

PROPRIETARY MARKS:

CDTV and the CDTV logo

PAYMENTS SHALL BE MADE TO: Commodore Holding B.V., c/o Commodore Business Machines, Inc., P.O. Box 7777-W6300, Philadelphia, PA 19175

COMMODORE HOLDING B.V.

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

LICENSEE

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

RJG/1604:smk

910307-6

COMMODORE CDTV PRODUCT LICENSE

THIS Agreement is entered into and made effective this __ day of _____, 199__, by and between Commodore Holding B.V. ("Commodore"), and the LICENSEE identified below.

1.0 DEFINITIONS

1.1 "CDTV Player" means a proprietary system capable of retrieving program information from a CD-ROM, which system is distributed under the trademark "CDTV", and manufactured by Commodore or by a third party under a written license from Commodore.

1.2 "Product" means the work identified in Exhibit 1 (the **"Work"**), as manufactured hereunder in a CD-ROM format compatible with the CDTV Player, together with such corrections, modifications, improvements and updates to the Product that do not substantially alter its original structure, content or functionality.

1.3 "Licensed Software" means those programs which Commodore makes available hereunder for (a) inclusion by LICENSEE in the Product (the **"Application Software"**), (b) LICENSEE's use in preparing and testing the Work to be manufactured hereunder (the **"Utility Software"**), and (c) LICENSEE's use in building a master image of the prepared and tested Work (the **"Mastering Software"**), together with such corrections, modifications, improvements and updates to the Licensed Software which Commodore makes generally available to licensees of the Licensed Software, without separate charge, and including any instructions, user manuals and other related documentation made available by Commodore to facilitate LICENSEE's use of such Licensed Software.

1.4 "Commodore's Proprietary Rights" means any and all patents, copyrights, and trade secrets, owned or controlled by Commodore during the term of this Agreement, which cover inventions, works and processes used or useful in preparing the Product for manufacture and in making the Product compatible with the CDTV Player.

1.5 "Proprietary Marks" means any and all trade names, trademarks, insignias, logos, proprietary marks, and the like identified in Exhibit 1.

2.0 LICENSE GRANTED

2.1 During the term of this Agreement and subject to the conditions herein, Commodore hereby grants to LICENSEE a nontransferable (except as specified in Paragraph 10.5), nonexclusive, license under Commodore's Proprietary Rights to use the Licensed Software, to manufacture copies of the Product in accordance with this Agreement for worldwide distribution to end-users, as follows:

(a) to reproduce and to modify with Commodore's written approval, the Application Software, and to include the same in the Product,

(b) to employ the Utility Software for the sole purpose of preparing and testing the Work for manufacture hereunder,

(c) to employ the Mastering Software for the sole purpose of building a master image of the prepared and tested Work in a format compatible with the CDTV Player, and

(d) to produce for distribution, CD-ROM copies of such master image as is created pursuant to the immediately preceding paragraphs (a) through (c), it being acknowledged by the parties that such copies may be marketed and distributed to end-users and that end-users may use such Licensed Software as has been included in the Product as a result of the manufacture of such Product hereunder.

2.2 Such license to produce copies of the Product master image as is set forth in Paragraph 2.1 (d), above shall include the right to have a third-party contractor replicate such master image.

2.3 During the term of this Agreement and subject to the conditions herein, Commodore hereby grants to LICENSEE the right to use the Proprietary Marks, only in connection with and as reasonably required for, LICENSEE's manufacture, distribution, and promotion of the Product hereunder, provided that LICENSEE's use of Proprietary Marks shall always be in accordance with Commodore's specifications, policies and directions and shall clearly indicate that the same is the property of Commodore or a Commodore affiliated company, as the case may be, and as reasonably directed by Commodore. LICENSEE acknowledges that Commodore may, in its reasonable judgment, at any time object to a specific use or application of any of the Proprietary Marks, specifying the reason for such objection, in which event LICENSEE will immediately cease such use or application thereof, except that LICENSEE may with Commodore's prior permission, which permission shall not be unreasonably withheld, use a reasonable supply of pre-printed materials that have been ordered or are on hand. All use by LICENSEE of such Proprietary Marks shall inure to the benefit of Commodore and its affiliated companies.

2.4 Except for those rights expressly granted above, no other rights or licenses are granted hereunder, by implication or otherwise. All such other rights, including without limitation the title to and ownership of the Licensed Software (including any modifications thereto), Commodore's Proprietary Rights and Proprietary Marks, as well as all rights relating to the CDTV Player are reserved to Commodore, its licensors and suppliers, and except as aforesaid the title to and ownership of the Product are reserved to LICENSEE, its licensors and suppliers.

3.0 TERM AND TERMINATION

3.1 This Agreement shall continue in full force and effect for a period of two (2) years from the effective date hereof and will be renewable for subsequent two year periods at LICENSEE's option, by written notice to Commodore at least thirty (30) days prior to the termination of any such period, provided that this Agreement shall automatically sooner terminate if LICENSEE fails to publish the Product within a twelve (12) month period following such effective date, or fails to continue to distribute such Product for any period in excess of nine (9) consecutive months, or unless terminated earlier as set forth below.

3.2 In addition to any other remedy which it may have at law or in equity, either party may immediately terminate this Agreement if the other party (a) materially breaches or fails to perform any of its obligations hereunder and if such breach or failure is not capable of being corrected, or if such breach or failure, though correctable, is not corrected within thirty (30) days of notice thereof from the non-breaching party, or (b) becomes insolvent or admits in writing its inability to pay its debts as they mature, or (c) files a voluntary petition in bankruptcy, makes an assignment for the benefit of creditors or has filed against it a petition under any bankruptcy law (and the same is not dismissed within sixty (60) days). Nothing herein shall prevent either party from seeking immediate injunctive relief or other appropriate remedy in the event of the other party's failure to comply with its obligations under Paragraphs 5.1 through 5.5 of this Agreement, the failure to comply with such obligations being deemed not correctable.

3.3 LICENSEE may terminate this Agreement at any time and without cause, upon sixty (60) days written notice to Commodore, providing LICENSEE is not in breach of any of the terms of this Agreement and is current with respect to all payments due hereunder. LICENSEE will remain obligated to pay all accrued amounts that become due and payable to Commodore after any such termination.

4.0 PAYMENTS

4.1 In consideration of the licenses and rights granted hereunder by Commodore, LICENSEE agrees to pay to Commodore the unit license fee set forth in Exhibit 1 ("License Fee"), for each unit of Product that is shipped to its customers. Such License Fee shall be payable in accordance with the provisions of Paragraph 4.2 of this Agreement.

4.2 Within twenty (20) days after the end of each calendar quarter ending after the date on which Products are first shipped, LICENSEE shall furnish to Commodore, a written report setting forth the quantity of Products shipped during such quarter and the computation of the aggregate License Fee payable with respect thereto as calculated using the per unit License Fee set forth in Exhibit 1. Each report shall be accompanied by a payment in the amount of the aggregate License Fees due with respect to that quarter. Commodore shall be entitled to receive interest on any late payments hereunder at a rate of 1 1/2% per month or such lesser rate, if any, as may be required by law.

4.3 LICENSEE shall keep books and records in sufficient detail to permit ready and accurate determination of any License Fees payable by it hereunder. Commodore shall have the right, on one occasion per calendar quarter on not less than seven (7) business days' prior notice, to cause its own accountants or any independent certified public accountant or firm of such accountants to audit such books and records to verify any such determination. Licensee shall provide all reasonable cooperation. Commodore shall pay all costs of such accountants unless such audit determines an unremedied underpayment to Commodore of more than 10% of the aggregate amount properly due to Commodore as revealed by the audit. In such event LICENSEE shall pay all such costs.

4.4 If Commodore shall grant a license with a scope and on terms and conditions substantially equivalent to that set forth herein at a royalty rate more favorable than that provided in this Agreement, then LICENSEE shall be entitled to receive the same favorable royalty rate, subject to the terms and conditions under which such more favorable royalty rate was granted, provided that this paragraph shall not be construed to apply to licenses granted for other than monetary consideration.

5.0 PROPRIETARY RIGHTS PROTECTION

5.1 Each party acknowledges that by virtue of this Agreement, it may gain access to information that is confidential and/or proprietary to the other party and that is so marked in writing, including without limitation, the Product, the Work, the Licensed Software and other trade secrets related to the CDTV Player and the manufacture of Products compatible therewith("Confidential Information"). For three (3) years from the effective date of this Agreement the party gaining access to (the "Recipient") Confidential Information hereunder, will use all reasonable efforts, but not less than the same degree of care it employs with its own like confidential information, to maintain in confidence all Confidential Information, to avoid disclosing the same to any third party, and to avoid using or permitting others to use the same, commercially or otherwise, in any manner contrary to the purposes of this Agreement or the best interests of the other party.

5.2 Recipient shall only disclose Confidential Information to those of its employees who have a need to know the same in order to accomplish the purposes of this Agreement. Prior to disclosing any Confidential Information hereunder, Recipient shall inform such employees who are to have access to the Confidential Information, of Recipient's limitations, duties and obligations regarding the use, nondisclosure and copying of the Confidential Information and shall obtain the written agreement of such employees to comply with those limitations, duties and obligations. The Recipient shall maintain records of its employees having access to the Confidential Information. Upon reasonable notice to the Recipient the party disclosing Confidential Information may audit such records.

5.3 Notwithstanding the above, Recipient shall have no obligation with respect to any information which: (1) was already known to Recipient at the time of receipt hereunder; (2) is or becomes public or rightfully received by the Recipient from a third party without similar restriction and without breach hereof; (3) is independently developed by the Recipient without benefit of any disclosure hereunder, or (4) is approved for release by written authorization of the disclosing party.

5.4 Upon proper termination of this Agreement by either party, use of all Licensed Software, Commodore's Proprietary Rights and Proprietary Marks by LICENSEE shall be discontinued, and the licenses and rights granted hereunder (except with respect to end-users of the Products shipped prior to such termination) shall expire and LICENSEE shall have no further rights or access to the Licensed Software, Commodore's Proprietary Information and Proprietary Marks. Within thirty (30) days after any such termination of this Agreement all copies of the Licensed Software (except as has been properly included in the Product hereunder) and all other materials containing any copy of any Confidential Information shall be returned to Commodore, or destroyed on Commodore's written instructions. If such termination is not a result of any breach of this Agreement by LICENSEE, LICENSEE may continue to distribute such Products as have been manufactured hereunder prior to such termination providing LICENSEE shall remain obligated to pay the License Fee for each unit of Product shipped.

5.5 LICENSEE shall not disassemble, decompile or otherwise reverse engineer the Licensed Software.

5.6 LICENSEE shall not remove or otherwise obliterate any trademark, patent, copyright or other proprietary rights notices or markings included on or in the Licensed Software, such Product master image as is prepared by the use of the Licensed Software, or any other materials supplied to LICENSEE hereunder, and shall reproduce and apply any of the same in and to any copies of such Licensed Software, Products and materials, in whole or in part, and in any form.

5.7 Notwithstanding any termination of this Agreement, any remaining obligations of the parties as set forth in this Section 5 shall survive this Agreement.

6.0 OTHER DUTIES AND OBLIGATIONS OF LICENSEE

6.1 Within ten (10) days after the initial manufacture of CD-ROM copies of the Product, LICENSEE shall cause to be furnished to Commodore at no additional charge to Commodore, to the attention of CDTV Products Coordinator, c/o Commodore International, 1200 Wilson Drive, West Chester, PA. 19380, or such other address as is specified by Commodore in writing, ten CD-ROM copies of such Product as has been manufactured hereunder, including such end-user documentation and materials as are to be generally furnished with the Product, provided that as a condition precedent, Commodore enter into LICENSEE's standard end user license agreement covering such copies and materials. Such copies may be retained by Commodore, subject to such license agreement.

6.2 LICENSEE shall use all reasonable efforts to comply with such quality control standards, user interface standards and disc packaging standards as are generally promulgated by Commodore with respect to products for the CDTV Player, provided that such standards are reasonably promulgated by Commodore, are appropriate to the particular product, and are given to LICENSEE in a timely manner. LICENSEE will promptly notify Commodore regarding any aspects of the Product for which LICENSEE will not substantially comply with any such standards that are in effect at the time LICENSEE releases the Product to manufacturing.

6.3 LICENSEE shall ensure that the Product manufactured hereunder is a professional, high quality product that LICENSEE reasonably and in good faith believes will not diminish or otherwise negatively affect the reputation and good will associated with Commodore and the Commodore Proprietary Marks licensed hereunder.

7.0 WARRANTIES

7.1 Commodore hereby warrants that it (a) has the right and power to enter into this Agreement and (b) owns or possesses from others (i) all right, title and interest in and to the Licensed Software, Commodore's Proprietary Rights, Proprietary Marks and CDTV Player, and (ii) the right to grant the rights and licenses set forth herein.

7.2 The Licensed Software and other materials provided by Commodore to LICENSEE hereunder are provided on an "AS IS" basis, without any warranty of any kind except as provided in Paragraph 7.1, above.

7.3 Except with respect to the Licensed Software, Commodore's Proprietary Rights and Proprietary Marks, which are included in the Product (and which are the subject of the Commodore warranty as set forth above), LICENSEE hereby warrants that it possesses sufficient right, title and interest in and to the Product, to reproduce, display and perform such Product, and to authorize others to so reproduce, display and perform the Product as is required by this Agreement. Except with respect to such Licensed Software, Commodore's Proprietary Rights and Proprietary Marks, which are included in the Product LICENSEE shall be solely responsible hereunder for obtaining such right, title and interest in and to the Product, and the continuance of such warranty shall be a condition precedent to such license grants as are made by Commodore herein.

7.4 NEITHER LICENSEE OR COMMODORE MAKE ANY OTHER EXPRESS OR IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE.

8.0 LIMITATION OF LIABILITY

8.1 IN NO EVENT WILL EITHER PARTY BE LIABLE FOR ANY LOST REVENUES OR PROFITS, OR OTHER SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

9.0 TAXES

All payments required under Section 4.0 or otherwise under this Agreement are exclusive of withholding and other taxes, and LICENSEE agrees to bear and be responsible for the payment of all such taxes, including, but not limited to, all sales, use, rental receipt, personal property or other taxes which may be levied or assessed in connection with this Agreement and excluding only such taxes as are based upon Commodore's income.

10.0 MISCELLANEOUS

10.1 All notices and other communications hereunder shall be in writing and effective when personally delivered, or transmitted by telephone facsimile with a confirmation copy by U.S. first class air mail or foreign equivalent, to a party at its address or addresses and facsimile numbers set forth below, or to such other address or addresses as such party shall have last notified to the other. If mailed, such notice shall be deemed received by the close of business on the date shown on the certified or registered mail receipt, or when it is actually received, whichever is sooner.

10.2 If any of the provisions, or portions thereof, of this Agreement are invalid under any applicable statute or rule of law, then, that provision notwithstanding, this Agreement shall remain in full force and effect and such provision shall be deemed omitted.

10.3 This Agreement and the attached Exhibit 1 which is incorporated herein by reference, constitute and express the final, entire and exclusive agreement and understanding between the parties and supersedes all previous communications, representations or agreements, whether written or oral, with respect to the subject matter hereof.

10.4 This Agreement may not be modified, amended, rescinded, canceled or waived, in whole or in part, except by a written instrument signed by the parties.

10.5 Except in connection with the sale of all or substantially all of LICENSEE's assets, or the sale or transfer of a product line that includes the Product, or the sale of LICENSEE or its business (by merger or otherwise), any of which may be done without the consent of Commodore, this Agreement, including any licenses and rights granted hereunder, may not be sold, leased, assigned, sublicensed (except as specified in paragraph 2.2) or otherwise transferred, in whole or in part, by LICENSEE, without the prior consent of Commodore, which shall not be unreasonably withheld or delayed. This Agreement shall inure to the benefit of and be binding on any third party's successor or any party to whom a transfer hereunder is permitted.

10.6 This Agreement is made under and shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania, excluding its conflicts of law provisions. The parties agree to submit to the exclusive jurisdiction of the appropriate courts located in Pennsylvania for the purpose of any suit, action or other proceeding in connection with this Agreement.

10.7 All payments hereunder shall be made in U.S. Dollars by wire transfer or by check addressed to the payee by U.S. first class air mail (or foreign equivalent) at the payee's applicable address set forth in Exhibit 1.

10.8 In addition to any other relief, the prevailing party in any action arising out of this Agreement shall be entitled to reasonable attorneys' fees and costs.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives.

COMMODORE HOLDING B.V.

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

LICENSEE

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

EXHIBIT 1

The Exhibit is attached to and made a part of that Agreement between Commodore Holding B.V. and _____ ("LICENSEE") dated and effective _____, 19___.

LICENSEE:_____
Address:_____
_____
_____

WORK:

Description:_____
_____

UNIT LICENSE FEE: Twenty-five ($.25) cents

PROPRIETARY MARKS:

CDTV and the CDTV logo

PAYMENTS SHALL BE MADE TO: Commodore Holding B.V., c/o Commodore Business Machines, Inc., P.O. Box 7777-W6300, Philadelphia, PA 19175

COMMODORE HOLDING B.V.

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

LICENSEE

By:_____
Name:_____
Title:_____
Address:_____
Fax No.:_____
Date:_____

RJG/1604:smk

Shoestring Productions

presents

Mastering the Mechanics of Multimedia

- a complete four-day course in the techniques of multimedia design, authoring and production
- to teach the mechanics of graphics, audio, animation and presentation of design to multimedia producers
- using a syllabus geared toward fundamentals of integrating and using the appropriate professional hardware and software tools to produce sophisticated and polished interactive titles
- emphasis in configuring the workstation hardware, using graphic and audio software, authoring tools, interactive design, and CD-ROM mastering and publication

Shoestring Productions, a pioneer in assembling low-cost multimedia production platforms, has arranged a course on how to quickly, efficiently and economically develop new capacity or improve existing multimedia production facilities. The course will benefit any group of individuals interested in improving their grasp on the mechanics of multimedia production, interactive design, animation, and CD-ROM or computer laserdisc training systems. The course focuses on the needs of project managers, designers and educators as follows:

- **Managers** will learn the basics of how to assemble a production facility, develop titles, and gain control of multimedia production
- **Designers** will learn advanced techniques in graphics, audio, animation, and the software and hardware tools needed to create lively productions in the new environment
- **Educators** will learn cost-effective ways to develop training workstations for computer graphics, animation and the digitization of audio and video

All software and hardware demonstrated in the course are professional productivity tools commercially available at this time. Participants will not be required to have computer programming skills or advanced preparation.

COURSE DETAILS

Mastering the Mechanics of Multimedia is a complete 4-day (32 hour) course with lectures, demonstrations, notes and valuable experience on how to develop and produce interactive multimedia titles for CD-ROM.

The course will be conducted 8 am to 5 pm, Monday through Thursday. Enrollment is limited to maintain efficient lecture pace and still address specific questions.

The next regularly scheduled dates are:

April 1 through 4, 1991

Instructor: Mr. Stephen Ritchie
Dominion Software & Design, Inc.

The complete course tuition is $600.00 per person, including instructional materials. Due to limited enrollment attendees must RSVP in advance, accompanied by tuition payment in full.

Location and course materials will be forwarded to attendees with enrollment confirmation.

A 10% cancellation fee of total tuition will be applicable. Tuition will not be prorated.

ABOUT THE INSTRUCTOR

The course sponsor is fortunate to have Stephen Ritchie as Instructor for this important new course that will help participants **Master the Mechanics of Multimedia.** Mr. Ritchie is President of Dominion Software & Design, Inc. a Fairfax, Virginia firm specializing in the production of CD-ROM multimedia titles for the consumer market. Prior to establishing Dominion Software, Mr. Ritchie specialized in programming parallel processing networks for real-time data analysis systems. He also programmed computer controlled assembly stations for the production of electro-mechanical devices. Mr. Ritchie holds degrees in Chemical Engineering and Chemistry from CalTech and Bowdoin College.

During the course, Mr. Ritchie will be joined by several specialists and technical representatives in specific topic areas.

CONFIDENTIAL

PRE-MASTERING AND MASTERING FOR CDTV

1.0 Introduction

Preparation of titles for the CDTV player presents new challenges to the developer. Combining graphics, animation, text, digitized IFF sound samples and CD audio (or CD-DA) samples in the same application provides endless opportunities for creation. Multimedia applications for CD ROMs also require new production methods. This document will describe the various steps and techniques necessary for taking an application which runs on an Amiga SCSI hard disk and transferring it to a CD, eventually adding CD-DA sound along the way, and having that CD replicated.

Finally, we will discuss how the C-Track Emulator can simplify and expedite this process.

We will assume that the application runs correctly on an Amiga 2000 under Workbench 1.3. The code, data, and IFF sound files are on an AmigaDOS SCSI hard disk. The CD-DA sound tracks are on a DAT tape or, alternatively, on a 3/4" U-matic tape.

A list of pre-mastering and mastering service centers is attached.

2.0 Overview of the Pre-Mastering and Mastering Cycle

Some developers may prefer to avoid the pre-mastering job. It is possible for you to send your AmigaDOS SCSI drive to a pre-mastering center directly and have them do the pre-mastering for you. They will charge you more for that service, and you will lose some control over the optimization of your ISO disk layout with this method.

We can divide the process into a number of steps. Here follows a brief description of the steps. Each step will be explained in detail in Section 3.

2.1 Preparing the tools. Before starting, you should verify you have all the hardware necessary to complete the job as well as the appropriate software tools.

2.2 ISO Control File Builder. The ISO tool scans the directory of your AmigaDOS drive and builds an ASCII control file with the disk structure and file hierarchy. You may wish to modify and optimize this control file manually.

2.3 Creating an ISO Image. The Buildtrack tool reads a control file and creates a binary ISO image file. This file can be stored as a file on an AmigaDOS disk. Alternately, you can use the same Buildtrack tool to create a block-for-block ISO image on another SCSI hard disk. The entire SCSI disk will be used--you cannot create a block-for-block image on a second partition of an AmigaDOS drive.

2.4 Creating a Test Disc. The ISO image file must now be transferred to a pre-mastering system, such as a Meridian CDPro. The SCSI disk connects directly to the Meridian. The Meridian then prepares a test disc, using a write-once CD-ROM drive such as a Yamaha PDS. The Meridian can also accept DAT tapes or 3/4" U-matic taper for CD-DA.

2.5 Testing. The Pre-Mastering Center will return a test disc to you. You should verify this disc's operation in a CDTV player through vigorous testing.

2.6 Mastering and Replication. After you are satisfied with your testing, tell the Pre-Mastering Center to prepare a pre-mastered tape. This tape, either 9-track or 8 mm, containing a logically formatted ISO 9660 image, is sent to the replicator of your choice. The replicator creates a master stamper that is subsequently used to press the CDs. Replicators also provide packaging services and ship your CDs, in jewel cases or long boxes, to you.

3.0 Description of the Production Cycle

3.1 Preparing the Tools

3.1.1 Hardware

The basic platform necessary to the developer for production is fairly simple: an Amiga with at least 3 Mb of RAM and one or (preferably) two SCSI hard disks.

Amiga: You can use either an Amiga 2000 (or 2500) or an Amiga 3000. Remember that CDTV player currently contains Workbench 1.3 in ROM, and your application must not contain any WB 2.0-specific code. If you have an A2000, make sure you use an A2091 controller. The A2090 and A2090A controllers may have difficulty in controlling more than one SCSI drive.

SCSI hard disk: We have verified and recommend using the following makes of high-capcity SCSI drives:

	Model Description	Approximate Retail price
Seagate ST4766N	600 Mbyte formatted capacity	$2400
Seagate ST2502N	410 Mbyte formatted capacity	$1300

3.1.2 Preparing the SCSI Drives

Up to 6 SCSI devices may be daisy-chained behind one A2091 controller. For the physical connection, follow the instructions in the 2091 User Manual. Be sure to set the device number on each drive, avoiding 2 drives with identical numbers.

Use the HD tool box to partition your drives, and verify that they are correctly recognized.

Buildtrack lets you create an ISO image file on two different devices. You can create a block-for-block image on a SCSI hard disk, or you can store the ISO image file on your AmigaDOS hard disk as an AmigaDOS file.

3.1.2.1 The block-for-block method will usually be chosen by developers who do not have direct access to CD mastering equipment. Once the block-for-block image is created on a hard disk, you simply send the hard disk to a pre-mastering center. They will read the data onto their mastering equipment and prepare a test disc.

If you choose this method, the disk must be connected as SCSI device 5.

3.1.2.2 The AmigaDOS file method allows you to store your ISO image as an AmigaDOS file on any AmigaDOS device. This method may be preferred in the following situations:

- if you are in a networking environment, with the mastering equipment connected into the net. You can then transfer the image file to the mastering equipment via the network.

- if you are physically near mastering equipment, you can transfer the image file to the mastering equipment via serial or parallel lines.

- if you want to keep more than one ISO image file in your system, for testing or control purposes.

3.1.3 Software tools. The ISO Dev Pak diskette contains all the necessary tools to create an ISO 9660 image.

3.1.4 Preparing your application disk. You must include a few important items on your application disk:

a. devs: directory. To avoid the "Workbench 1.3 Copyright Commodore" message at boot time, include a system configuration file in the devs directory with the four workbench colors all set to black.

b. c: directory. Copy the files "rmtm" and "CDTVPrefs" from the c: directory of the ISODevPak diskette to the c: directory of your application disk.

c. root directory. Copy the file CDTV.TM from the ISODevPak diskette to the root directory of your application disk.

d. s:startup-sequence. Add the command "rmtm" at the beginning of your startup-sequence in the s: directory of your disk. (If you include the Setpatch command, put rmtm just after Setpatch.) You must also add the command "CDTVPrefs" in your startup-sequence. This command reads the Prefs in the CDTV non-volatile RAM, and centers the screen accordingly.

3.2 ISO Control File

The ISO Control File Builder automatically scans your AmigaDOS drive and builds a control file for the actual CD image builder. This control file is used by BuildTrack to build a CD-ROM track image on an AmigaDOS hard disk, or block-for-block disk image on a SCSI disk.

The Control File Builder will build your new ISO file based on the pathname you provide. If, as an example, you wish to build the entire drive, you would simply type ISO <drive name:>. If you want to build only a directory, just give the full path that you wish to build, i.e. "ISO dh0:mydirectory". Always keep in mind that the Control File Builder will build an exact image of an ISO CD. The Control File Builder will construct the ISO directory for you and will optimize that directory structure for you.

3.2.1 Running ISO.

Here are the steps involved in creating a an ISO control file:

1: BOOT with the ISO Devpak diskette

2: Open a Shell

3: type cd RAM:ISO2 <RTN>

4: type iso (source path) <RTN>

```
Volume ISO9660       :(Destination path)     <RTN>
VolumeIdentifier     :(name i.e. Myvolume)   <RTN>
VolumeSetIdentifier  :(name i.e. Volume 1)   <RTN>
PublisherIdentifier  :(your company name)    <RTN>
```

The source path is the pathname describing where your application resides. It may be a full drive (i.e. "dh0:") or just a single directory (i.e. "dh0:mydirectory")

The Destination path is the pathname and filename where the ISO image will be stored. If you are connected directly to the CD Mastering equipment, the Destinatioin path is normally DR1: In that case, you should skip section 3.3.2.

Alternatively, the Destination path can be any AmigaDOS filename (i.e. DH1:myfile). In this case, the file may be transferred to the CD Mastering equipment via a network, or serial or parallel lines.

The VolumeIdentifier is a text string with the name of the ISO volume to be created. You may enter any name you wish.

The VolumeSetIdentifier a text string with the name of a volume set. You may enter any name you wish.

The PublisherIdentifier is a text string with the name of your company.

The VolumeIdentifier, VolumeSetIdentifier and PublisherIdentifier will be written in track 0 of the ISO volume.

CAUTION !!!!!

ISO should be run in RAM DISK, running it on the source drive would, of course, modify the disk you are building as it is being built.

ISO will create a file called "controlfile" in your RAM:ISO2 directory. Don't re-boot yet.

3.2.2 Optimizing the controlfile.

The controlfile is ASCII text, so you can read it or edit it if you wish. You may also wish to relocate where files and/or directories reside on the ISO CD-ROM, to optimize performance.

By default ISO sorts the files in a directory in ascending order by file size. This is generally the optimum order for the CDFS. However, if your application would operate faster with the files in some other order, you are free to change the order of the files.

For example, if file Pic.1 is to be loaded, then the sound files Noise.1, Noise.2 and Noise.3 are to be played sequentially, you might choose to put all 4 files in one directory, in that order.

What you must NOT do is change the directory in which a file resides. If you wish to do so, you must physically change them on your source hard disk, then run ISO again. If you move a file from one directory to another manually, the BuildTrack program will return a "file not found" error.

3.3 Creating an ISO Image

Two options are available for creating ISO images: a single track image, or a block-for-block disk image. First let's review briefly the format of an ISO disc.

3.3.1 ISO Disc Structure

An ISO 9660 standard CD-ROM is divided up into a number of variable-length tracks. These tracks are recorded in a spiral, from the center of the CD outwards. The spiral is 3 miles long on a full disc.

Track 0, known as the "subchannel", is reserved for the system. It contains information such as:
- the type of system on which the disc can boot
- the Table of Contents of the disc (TOC). The TOC describes the number of tracks on the disc, their location on the disc, and if the track contains CD audio or data.

Track 1 is the usual location for all data files. Here are stored your program's code, graphic files, IFF sound files, animations, etc. Again, this track is as long as needed to contain all your application's data.

Tracks 2-99 are for CD Audio (CD-DA) or other data tracks. These tracks are also of variable length. You may determine how to store your CD-DA information on these tracks. You may put one "song" or voice narration per track. Or you can have one long track with numerous samples. The CDTV Device Driver provides means for playing an entire track, or a certain portion of a track, beginning at a precise location (mm:ss:ff, where mm is minutes, ss is seconds, and ff is frames (75 frames per second)).

3.3.2 Preparing the hard disk

If you are connected directly to CD mastering equipment, you can skip this step, and go directly to 3.3.3.

Now that your controlfile is in RAM: and has the files in the order you prefer, you are ready to prepare a hard disk to receive the block-for-block ISO image. **WARNING: This step will erase the contents of the hard disk connected as SCSI device 5!**

From the CLI, type:

```
run bytedrive scsi.device 5 <RTN>
```

This will re-direct the output from BuildTrack to device 5. The bytedrive utility can only write to device 5.

Note that bytedrive requires both your application disk and the target disk to be attached to the same A2091 controller.

Now from the CLI type:

```
mount dr1:<RTN>
```

This mounts a special volume, dr1: which is addressed by BuildTrack.

3.3.3 Creating an ISO image file

The Buildtrack utility lets you create an ISO disc image file of one track on Amiga disk, or on a network disk. The process is simple. While still in the RAM:ISO2 directory, type:

```
buildtrack controlfile -w
```

This will start the image process and will save the image file to the destination path you specified with the ISO command. (see section 3.2, step 4)

The -w switch will turn off the ISO filename warnings. These warnings are generated because the CDTV file system (CDFS) accepts any standard AmigaDOS file name. Many of those names are not part of the ISO 9660 standard, but are CDTV-specific extensions to the standard. For example, the ISO standard limits file names to 8 caracters, and their extensions to 3. (Uncanny resemblance to another operating system, no?) BuildTrack will provide warnings about fatal errors, however.

Upon completion, BuildTrack will generate an ISO image file, either on your destination AmigaDOS hard disk, or a block-for-block image on SCSI device 5.

3.3.4 Running fixtm

In order for your CDTV application to boot directly, you must include a special file called CDTV.TM in your root directory. This file is provided on the ISODevPak diskette.

The fixtm utility, on the same diskette, is used during pre-mastering to update the ISO image file with key information. You should run fixtm when you have finished the buildtrack utility.

Fixtm operates on both block-to-block hard disk images and on single track image files.

a) If you have created a block-to-block image on SCSI device 5, or on device 0, fixtm will read that image, and make sure it is a valid ISO image. It will then ask you the following question:

"Device <n> contains an ISO image, volume name <yourvolumename>. Update this image? (Y/N)"

Type Y to confirm, and fixtm will update the image to render your application directly bootable.

b) If fixtm finds no ISO image on SCSI device 5 or 0, it assumes you have created an image file on an AmigaDOS device. It then asks for the name of that file:

"Name of AmigaDOS image file to be updated:"

Here you should give the same destination path and filename as in section 3.2.1 step 4.(i.e. "DH0:myapp/imagefile"). The program will then update that image to render your application directly bootable.

3.4 Cutting a Test Disc

The ISO image must now be transferred to a pre-mastering facility to cut a test disc.

3.4.1 Media for data transfer

Currently two methods exist for physically transferring the image to the disk of the pre-mastering system: sending a SCSI hard disk drive, and a tape backup.

a) The most direct method is to ship the SCSI drive to the pre-mastering center. This method, while primitive, is fast and convenient. We have found that SCSI drives are surprisingly robust. If properly packaged, they can be sent via DHL, FedEx or equivalent and are rarely damaged en route.

The pre-mastering center simply plugs in your SCSI drive, block reads the data across to the Meridian's drive, and returns the drive to you along with the test disc. You will have to specify how many bytes of data are on the drive.

b) Alternatively you may back up your application to tape. We have tested the A3070 SCSI tape drives from Commodore, and they work well. Their major limitation: they only accept tapes of 150 Mbytes maximum. If your application goes beyond 150 M, you will have to split up the image, using the BRU utility.

The A3070 can only be used to store a track image. No software is currently available to transfer the block-for-block ISO image from a SCSI drive to the A3070.

We have been unsuccessful with Exabyte drives. Our testing has found the hardware to be unreliable. However, Exabyte is one of the most popular formats for European replicators.

We are investigating solutions to back up to a DAT drive, but have yet to find an inexpensive and reliable system. Any experience from developers would be greatly appreciated.

No matter what format you choose, make sure you indicate the total size of the ISO file you send to the pre-mastering company. Otherwise they will not know if they have transferred the entire file to their pre-mastering equipment.

3.4.2 Including CD-DA

If your application uses CD-DA, now is the time to supply the CD-DA data to the pre-mastering company. The formats accepted may vary from DAT tape to 3/4 inch Umatic tape.

When you create your CD-DA soundtracks, you should have them recorded at 0 decibels. The CDTV player is designed to attenuate the level of the Amiga sound, so that an Amiga sound played at maximum level will be just as loud as a 0-decibel CD-DA recording.

You should include SMPTE time code data on your CD-DA tape. This is obligatory if you wish to use the PlayMSF routines in your

application, as they address the SMPTE codes directly.

See section 3.6.1 and Appendix B for more information on CD audio tapes.

3.5 Testing

Now comes a crucial step -- the verification of your test disc, before replication in quality.

3.5.1 "Gold" Disc

The pre-mastering facility will prepare a write-once CD, sometimes called a Gold Disc. This disc can be used for testing purposes.

You may want to ask for more than one copy of the Gold Disc, to test in multiple sites.

3.5.2 Testing

We strongly suggest that you test your application thoroughly. Points to consider:

- Try to run through all possible paths to your code and data.
- Load times. Verify that loading of graphics and audio is properly co-ordinated. Make sure you don't start playing an audio file too soon, or too late.
- Animation/video. Verify your animation or video sequences. If things are too slow, you might consider using alternate compression routines.

3.5.3 In case of trouble

If you find problems, you will have to modify your code, then prepare another ISO image. Return to step 3.2. Do not pass GO. Do not collect $200.

However, all is not lost. If you have transferred all your data, IFF sound files, animations, code, and even CD-DA data onto the test disc, and discover timing problems or other bugs in your code, DON'T THROW AWAY YOUR TEST DISC! You can modify your code on your A2500 development system, and recompile there. Then transfer your code to a floppy diskette.

Now connect an A1011 floppy disk drive to the rear of your CDTV reader, insert your test disc in the CDTV player, insert your

floppy disk, and boot from the floppy. Your program on the floppy can access the data on the CD. It can play CD-DA tracks on the test disc as well. Thoroughly testing your application in this environment can avoid extra trips to the pre-mastering center for test discs.

3.6 Mastering and Replication

Having thoroughly tested your application on a write-once CD, you are ready for the final steps: mastering and replication.

3.6.1 Producing the Master Tapes

While it is possible to create a "master stamper" directly from a write-once CD, most replication centers prefer to receive a 9-track tape for input. This tape is prepared by the pre-mastering facility that made your test disc.

The master tape is an ANSI-labeled, 9 track, 1/2 inch tape containing an image of your applications code and data. The file may be split up over 2-4 reels, if the application cannot reside on one.

3.6.2 Preparing CD-DA tapes

If your application includes CD-DA audio, separate CD audio tapes will be created. CD Audio master tapes preferrably have contiguous files with no files broken up across reels. Each 9-track tape holds approximately 138 Mbytes. You can write multiple files to each tape, but all the files must be contiguous.

The replicator will need to know where to place the tracks on the CD. The Track Sheet tells the replicator where to locate each track on the disc. The track sheet should also show the audio gap time between each track. The default gap time between tracks is 2 seconds. CD-ROM standards require that a 2 second gap be placed between DATA and AUDIO tracks, but there is no gap requirement between two AUDIO tracks. The Track Sheet will tell the replicator if you want a gap time different from the default 2 second time. Any gap time, even 0 seconds, is valid between two AUDIO tracks.

The Track Sheet can also tell the replicator where (in CD time) to start the tracks. Please refer to the sample Track Sheet in Appendix B.

3.6.2 Replication

Upon receipt of the master tapes, the replicator begins work. A

detailed description of the numerous steps involved is beyond the scope of this document. But here is a brief overview.[1]

(1) The tape's image is transferred to a large hard disk system. That system adds extra information, such as the synch pattern, the header, and error detection and correction data. Each sector is thus expanded from 2048 bytes to 2352 bytes.

(2) The sectors are transferred to the Laser Beam Recorder. This signal-processing rack and recorder adds error correction and subcode data, and performs the low-level encoding. The subcode data tells the CD-ROM drive where the head is located, independent of the sector data. The Recorder then exposes the master disc, a glass disc coated with a very thin layer of photoresist.

(3) The master is developed, and the photoresist which was exposed to the laser beam is etched away, leaving the pits. It is then coated with a thin layer of silver. The master can now be read, and is carefully tested on a special player to ensure quality.

(4) A "stamper" is created to actually press the CDs. Nickel is electroplated onto the silver surface of the master. The nickel shell is then separated from the glass master, creating a mirror image of the master.

(5) The stamper is placed on a molding machine. Molten polycarbonate is pushed between it and a mold. This polycarbonate is given an aluminum reflective layer, and a protective coating is added. It is now a CD.

(6) A label is printed on the CD, either via silk screening or pad printing. The CDs are put through a final quality assurance inspection. Finally, the replicator packages the CD, in a jewel case or a long box, and shrink-wraps the product.

4.0 The C-Trac Emulator

The C-Trac emulator, soon to be available from ICOM, will enable the developer to shorten his development cycle and reduce his pre-mastering costs.

4.1 Hardware and installation

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[1] Excerpts from "From Tape to Compact Disc: an Explication of the Process", by Clayton Summers, Disc Magazine, Fall 1990

The Emulator is described in detail elsewhere in the Developer Notes. It is a board that plugs into the slot of an Amiga 2000 or Amiga 2500. It is connected via a ribbon cable to the motherboard of the CDTV.

The developer must format a hard disk under Cross DOS. This Cross DOS disk will be used to store the ISO 9660 image of your data necessary for the emulator. You can also store regular AmigaDOS files on the Cross DOS drive. The AmigaDOS file system will mount the Cross DOS drive, with its own file system, and you can use standard AmigaDOS commands to manipulate and access the data. Thus the same physical hard disk can hold both the ISO image and the AmigaDOS data and code.

4.2 CD-DA files

Furthermore, you can store CD-DA data on the Cross DOS drive. The CD-DA files are seen as normal files by the file system. You can capture the files with tools currently available only on PCs or MacIntoshes. We are waiting for CD-DA sound digitizers from two Amiga developers. We will keep you posted when they are available.

4.3 Emulating a CD

When a special command is typed, the emulator activates. It looks for the s:startup-sequence file on the ISO image of the hard disk, loads that file into the memory of the CDTV player, and starts to run.

Whenever the CDTV player wants to access the CD, the emulator board intercepts the call. It reads the data from the Cross DOS disk in the Amiga 2500, emulating the seek time of a CD. It also slows down the transfer rate from the disk to the memory of the CDTV player, to approximate the 150 Kbytes/second used on the CDTV player.

The CTrac system allows you to test your application in an environment which provides response times very similar to those of a test disc. It can save you thousands of dollars by avoiding repeated cuts of test discs.

APPENDIX A

Names and addresses of Premastering and Mastering centers

The following companies pre-master, master, and/or replicate CD-ROMs. They should be contacted individually for specialities and pricing information:

3M OPTICAL RECORDING DEPARTMENT
3M Center 223-5S-01
St. Paul, MN 55144-1000
tel. (1) 612-736-5399
fax (1) 612-733-0158
Sales contact: V.R. (Dick) Pendill
Technical contact: Jerre R. Lee tel. (715) 235-5567

Territories served: North and South America, Europe
Preferred Source format: 8mm Exabyte, 4 mm DDS DAT
Terms of Business: Net 30 days

ADVANCED MEDIA GROUP, LTD.
P.O. Box 1623
Lancaster, PA 17603
tel. (1) 717-392-6533
fax (1) 717-392-0532
Sales contact: Stan Caterbone
Technical contact: Stan Caterbone/Mike Hess
Territories served: North and South America, Europe, Far East
Preferred source format: Tape, hard disk. All media accepted upon prior approval.
Terms of Business: Upon invoice; Net 30 with prior approval
One-off service: available
Pre-mastering and CDTV ISO building service: soon available

DIGIPRESS
2516 River Bend Drive
Louisville, KY 40206
tel. (1) 502-895-0565
Contact: Dennis Oudard

In Europe, contact:
DIGIPRESS

10 rue de Paris
78100 Saint-Germain-en-Laye
France
tel. (33) 1-30-61-11-00
Contact: Marc Deflassieux

DIGITAL AUDIO DISC CORPORATION (DADC)
1800 N. Fruitridge Ave.
Terre Haute, IN 47804
customer service tel. (1) 812-462-8192
customer service fax (1) 812-466-2007
Sales contact: Bob Hurley tel. 603-595-4331
fax 603-595-4310
Technical Contact: Cliff Brannon tel. 812-462-8286
fax 812-466-9125
Territories served: US, Europe, Far East
Preferred source format: 9 track tape, MO, 8mm, 4mm, CD WO
Terms of Business: 1% 10 Net 30
One-off service: available
Pre-mastering and CDTV ISO building service: soon available

DISCOVERY SYSTEMS
7001 Discovery Boulevard
Dublin, OH 43017
tel. (1) 614-761-2000
fax (1) 614-741-4258
Sales Contact: Greg Tiller
Technical Contact: Alex Deak, Customer Service

Territories served: North America, Europe, Australia
Preferred Source format: 9 track or 8mm tape. Call for additional options.
One-off service: available
Pre-mastering and CDTV ISO build services: soon available
Terms of business: 90 days net

DISC MANUFACTURING, INC.
1120 Cosby Way
Anaheim, CA 92086
tel. (1) 714-630-6700
fax (1) 714-630-1025
Sales contact: Wan Seegmiller
Technical contact: Leon Whidbee

You may also contact:
DISC MANUFACTURING, INC.
A Quixote Company
4905 Moores Mill Rd.
Huntsville, AL. 35810
tel. (1) 205-859-9042
fax (1) 205-859-9932
Sales contact: Kim Vandenberghe
Technical contact: Shogo Karitani

Territories served: North and South America, Europe, Far East
Preferred Source format: 8mm Exabyte, Pinnacle MO, One-off CD, 9-track computer tape
One-off service: available
Pre-mastering and CDTV ISO build services: soon available
Terms of Business: Net 30 days, on credit approval

NEXT TECHNOLOGY CORPORATION LTD.
St. John's Innovation Center
Cambridge
Cambridgeshire CB4 4WS
UNITED KINGDOM
tel (44) 223 420 222
fax (44) 223 420 015
Sales contact: Ian Thomas
Technical contact: Neil Critchell

Territories served: Europe
Pre-mastering and CDTV ISO building service: available

NEXT does not do replication. They are specialized in pre-mastering and CDTV ISO building services.

NIMBUS INFORMATION SYSTEMS
SR 629, Guildford Farm
Ruckersville, VA 22968
USA
tel. (1) 804-985-1100 or 800-782-0778
fax (1) 804-985-4625
Sales contact: Larry Boden
Technical contact: Ernest Runyon

In Europe, contact:
NIMBUS INFORMATION SYSTEMS

Wyastone Leys, Monmouth
GWENT NP5 3SR
United Kingdom
tel. (44) 600-890682
fax (44) 600-890779
Sales contact: Steve Connoly
Technical Contact: Jim Orr

Territories served: US and Europe
Preferred source format: 4mm DAT or 8mm Exabyte
Terms of business: Net 30 days, upon credit approval
One-off service: available
Pre-mastering and CDTV ISO building service: available

PHILLIPS AND DU PONT OPTICAL
1409 Foulk Road, Suite 200
Wilmington, DE 19803
tel. (1) 302-479-2501
fax (1) 302-479-2512
Sales contact: US: Joe Bradley tel. 301-989-9341
Technical contact: Jim Fricks tel. 704-734-4211

In Europe, contact:
PHILLIPS AND DU PONT OPTICAL CO.
Buizerdlann 2,3435 SB
Nieuwegein, The Netherlands
tel. (31) 34-2-78754
Sales contact: Robert Fisher tel. (31) 3402-78754
Technical contact: Uwe Spitzenberger tel. (49) 511-7306253

Territories served: US and Europe
Preferred source format: 8mm, 9-track tape, one-off CD
Terms of business: Net 30 days
One-off service: available
Pre-mastering and CDTV ISO building service: soon available

SONOPRESS GMBH
Carl-Bertelsmann-Str. 161
D-4830 Gutersloh 100
Germany
tel. (49) 5241-803074
fax (49) 5241-73686
Sales contact: Dr. Reinhard Raubenheimer
Technical contact: Mr. Ulrich Graznow tel. (49) 5241-805250
fax (49) 5241-75863

Territories served: All European countries, US if required
Preferred source format: 9 track tape, Exabyte, SCSI harddisk. Audio input media: Sony 1610/1630
Terms of business: based on customers requirements
One-off service: available
Pre-mastering service: soon available

Sonopress provides pan-European services. Here are contact names and numbers in other countries:

SONOPRESS UK
Sales contact: Miss Sabine Leuerer
tel. (44) 71-499-6813
fax (44) 71-493-7244

SONOPRESS FRANCE
Sales contact: Madame Bornhold
tel. (33) 1-45-636707
fax (33) 1-43-596673

SONOPRESS ITALY
Sales contact: Dr. Paolo Montagna
tel. (39) 2-7600-4737
fax (39) 2-7601-5026

APPENDIX B

SAMPLE TRACK SHEET

TITLE: SPACE WASTE DEVELOPER: FLY BY NIGHT MULTIMEDIA

TRACK #	TRACK NAME	CD ROM/ AUDIO	GAP TIME	CD TIME START
01	AWESOME GAME	CDROM	STD. 2 SEC	--------
02	SOUND EFFECTS TRACK	AUDIO	0 SEC.	04:15:00
03	INNA GODDA DAVIDA	AUDIO	0 SEC.	NA
04	FLY ME TO THE MOON	AUDIO	0 SEC.	NA

TOTAL TRACKS: 4

Notes:

Even though it seems obvious always be sure to write down the title and customer name at the top of the Track Sheet.

In this sample Track Sheet, track 1 contains data per the Yellow Book CD-ROM standards. Also notice that the 2 second post-gap is required (also per the Yellow Book).

Track 2 contains sound effects that will be played back via absolute Minute/Second/Frame reference (using PlayMSF). The track will begin at exactly 4 minutes 15 seconds CD time. Gap time (except for the mandatory CD-ROM gap) is not relevant since the program is addressing the track starting at an absolute location.

Track 3 is a soundtrack that is played during the opening sequences by playing the track (using PlayTrack). Absolute location is not needed since the PlayTrack function will start playing at the beginning of the track and will stop when directed by the program. Notice that the gap time is zero. The PlayTrack function will start playing at the beginning of the gap, not the beginning of the music. By using a gap time of zero, the music will start playing immediately instead of after the gap.

Track 4 is another soundtrack that is played exactly like track 3.

Be sure to write down the total number of tracks on the bottom of each Track Sheet that you submit. You wouldn't want a replicator to miss a track.